

The **REALEX** WHITEPAPER 2021

The RealEx DAO

Introducing The Steadycoin

**A Real-Asset Backed
Cryptocurrency**

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I. INTRODUCTION: WHAT IS REALEX?

RealEx is the first real estate-backed cryptocurrency. RealEx has been created by the RealEx DAO (decentralized autonomous organization), which aims to democratize real asset ownership and empower billions of people to participate in wealth creation through decentralized finance.

One of the key elements of this social enterprise is the creation of the first **steadycoin**, a cryptocurrency backed by inflation-resistant hard assets (not fiat currency), which offers the potential of yield to the owners, and provides a medium of exchange. The RealEx steadycoin will be launched on the Ethereum blockchain under the symbol "REALEX".

The RealEx DAO will use its steadycoin to fund the acquisition of real estate and crypto assets, which provides the underlying value of the cryptocurrency. Proceeds are also used to support the continued development of the core technology platform (the "RealEx Protocol") on behalf of the community.

The RealEx DAO will share any proceeds from crypto and real estate staking with the community of steadycoin owners. Based on historical staking operations and modeling, the estimated yield is 10+% per year, in addition to the expected long-term growth in value of the underlying assets, and change in steadycoin price. The parameters are governed by the RealEx DAO through coordination and consensus from the community, and not decided upon by a single person.

The RealEx DAO will build the RealEx Protocol, which is an open source transaction and data layer built on Ethereum that will empower anyone to integrate their own assets or software into RealEx. The RealEx Protocol will be designed to be an app store for tokenizing real assets.

The RealEx steadycoin is a system of smart contracts. These are:

- The RealEx steadycoin (REALEX) - A standard ERC20 token that can be integrated into any DeFi product and protocol.
- The RealEx Governance token (REALEX-G) - A token providing governance rights over decisions in the DAO. This is a non-transferrable token.
- The RealEx Asset NFTs (REALEX-NFT) - A non-fungible token representing real assets under management by the DAO.
- The RealEx Asset Vault - A set of smart contracts coordinating the assets held in the vault and the issuance of REALEX tokens as a representation of those assets.

The interaction of these components, their impact on the marketplace, and their ability to create massive social impact is the focus of this whitepaper. This whitepaper, which is a living document, will be updated at regular intervals by the DAO community.

II. THE PAST AND THE FUTURE: TOKENIZATION OF REAL ASSETS & THE REAL EX DAO'S STEADY COIN

A. The Past: Challenges with Tokenization of Real Assets

Real estate, initially considered an ideal use case for tokenization, has proven itself to be a stubbornly illiquid asset class. While tokenization solves many challenges presented by traditional real estate ownership models, many powerful blockers remain. For example, while a token may ultimately be traded seamlessly at a low cost, the initial transaction cost for minting and maintaining a token is considerable, making it financially impractical for many individual properties. Further, real estate, by its very nature, is unique, irreplaceable, and non-fungible.

Unlike tokens representing many other non-fungible tokens (NFTs), however, real estate ownership entails ongoing maintenance and management, so tokenized real estate will require significant technology upgrades to continuously render necessary actionable data. While the NFT model applies directly to properties and other real assets, until there is an ecosystem of blockchain-based tools to support day-to-day operations, the promise of real asset tokenization will remain just that: a promise.

There is currently no substantial market for fractional interests in isolated properties. The entire trading value of the security token marketplace, where several fractional real estate properties are traded, is only a fraction of the daily trading volume of ANY of the top 20 cryptocurrencies. The planned tokenization of a luxury condominium development in NYC was abandoned due to lack of institutional interest ("Propellr and Fluidity's NYC Real Estate Tokenization Deal Falls Through"), and the first real estate security token, the ASPEN coin, has experienced very little trading on the secondary market. It may be that it's just early days for this sector. Or it may be that this market making approach to date is not how the democratization of real estate ownership is going to happen.

B. The Future: RealEx DAO's Point of Differentiation and the Creation of the Steadycoin

In addition to the challenges related to the tokenization of individual assets and the lack of liquidity in the market, the overall volatility of cryptocurrencies has led to a growing demand for a safer crypto investment. Fiat currency-pegged stablecoins have become mainstream in crypto due to their lack of volatility as compared to tokens like Bitcoin and Ether. However, the comfort that many users have associated with stablecoins is based on the misconception that stablecoins will provide them with the same purchasing power tomorrow as they have today. Stablecoins are backed by centralized bank-controlled currencies, which leaves them as equally vulnerable to depreciation as the currency itself.

RealEx DAO's goal is to solve this problem by creating a new cryptocurrency category called "**steadycoins**". Steadycos are backed by a basket of inflation-resistant assets, which will cause them to be a safer crypto, as the value of the underlying assets will help maintain the steadycoin's purchasing power regardless of market volatility. In addition, steadycoins offer yield to their token holders.

The core of the RealEx DAO Protocol is the RealEx Steadycoin, which provides:

- Diversified risk across a very wide variety of assets
- More liquidity for token holders
- Integrated access to the utility of all or a subset of assets
- Leverage across the DeFi ecosystem as a medium of exchange
- Open access through public blockchain networks

RealEx is pioneering digital asset technology representing an evolution in the ownership of real assets such as real estate. It provides a platform to make it possible for anyone to benefit from real asset ownership, while making the most of the utility and growth of the decentralized finance markets.

RealEx will provide a protocol level composition and integration layer that enables many different participants to plug into the system, offering a utility that enhances the use and optimization of assets managed by the protocol; all powered through the RealEx steadycoin (symbol: REALEX).

A steadycoin delivers multiple benefits to its holders, including:

- **Intrinsic Value** - It is hard asset backed creating a floor of value for the coin. Liquidation of the treasury is used to acquire assets to back up the underlying steadycoin value.
- **Equity Value** - A steadycoin has the possibility for growth in the underlying asset value so it's unlikely to be as volatile in market crashes or manipulation.
- **Income Producing** - Steadycos provide a steady stream of yield.
- **Inflation Resistant** - Steadycos are not pegged to a currency. Because inflation increases prices (and decreases the purchasing power of the currency), this keeps yield consistent relative to inflation.

Because RealEx is backed by real estate assets, RealEx can further be used as a utility to unlock access to the assets; such as discounts on rent, or access to special events.

III. REALEX DAO'S SOCIAL MISSION

A. The Global Student Debt Crisis

The RealEx DAO's first social mission is to transform student debt into financial independence by awarding RealEx steadycoins to anyone across the globe who has student debt.

For centuries, inter-generational wealth has been created through real estate investing, yet over 70% of the nearly 45 million U.S. student debt holders, collectively holding \$1.7 trillion in student debt, say they cannot afford a downpayment on a home due to their student debt. This social problem is preventing two generations of Americans from buying property or from participating in traditional financial markets.

Although the U.S. is the prime example of this crisis, it is no longer a uniquely American problem. As of late 2021, 1.3 million people in the UK hold a staggering £57 billion GBP in debt from education loans (equivalent to \$78 billion USD). India is also encountering a similar crisis, with high levels of student loan debt, and young people are increasingly defaulting on their loan repayments.

"Federal student loans dangle the opportunity of access to higher education, but the ensuing debt undermines the benefit such education is supposed to provide," argue Dalie Jimenez & Jonathan D. Glater in their research report on student debt. These benefits include financial security and wealth creation. As legislators and leaders across the globe have been unable to effectively address this crisis, the problem will continue to persist.

The RealEx DAO community recognized that the same global demographic of student debt holders have been driving digital disruption in the financial sector investing heavily in cryptocurrencies which are accessible, convenient, and affordable investment options. Especially for those who have been traditionally excluded.

However, crypto's volatility has led to this demographic's growing demand for a safer digital asset that has stability and longevity. RealEx DAO's asset-backed cryptocurrency will provide them with just that: the upside of crypto with the safety of hard assets. This new DeFi application will usher in a new generation of investing, ultimately empowering everyone, even those traditionally excluded, to get on the path to wealth creation by investing in crypto real estate.

B. RealEx DAO's Plans to Transform Student Debt into Financial Independence

The RealEx DAO plans to launch a program through its foundation (the "RealEx Foundation"), which is designed to help people transform their student debt into financial independence. When student debt holders join the DAO community and actively participate, they will receive RealEx steadycoins. The hope is that these individuals will eventually have the opportunity to get ahead as the value of their real estate-backed cryptocurrency potentially grows over time.

The RealEx Foundation has been allocated 10 million RealEx steadycoins to be transferred to any student debt holders around the world who join the RealEx DAO community, provided that they:

- Apply to become a community member of the RealEx DAO;
- Are over 18 years old and provide contact information;
- Have a valid student loan or are currently enrolled in a university or technical school;
- Provide a cryptocurrency wallet in which they can receive tokens; and
- Actively contribute to the RealEx DAO by providing some kind of service (services may include completing surveys, responding to information requests regarding real RealEx DAO project interests and potential venture suggestions, etc.).

IV. THE REALEX DAO SOLUTION

The RealEx DAO integrates the following key components:

1. A decentralized autonomous organization (DAO) that owns vaults of real assets and cryptocurrencies that are staked on the RealEx Protocol, with ownership and governance rights represented through the REALEX steadycoins.
2. The RealEx Protocol offers an Ethereum-homed open platform that provides non-custodial mission-led real asset management. This RealEx Protocol can scale to every asset and every user on the planet and beyond.
3. RealEx DAO Asset Vaults hold the real estate, crypto, and other assets collectively owned by the DAO community. These assets support the value of the RealEx steadycoins and are staked to create yield for the DAO community's work product.
4. The RealEx Foundation distributes RealEx steadycoins to fulfill the DAO's social mission. For example, the RealEx Foundation is the entity that will form a community of individuals with student debt and distribute tokens to them for their participation.

A. The RealEx DAO Governance

RealEx will be governed through the RealEx DAO, enabling token holders to participate in the decisions of the organization's operations as well as the ongoing use of the treasury to drive adoption and evolution of the Protocol. The DAO has determined that the goals of governance will initially be:

- Fair distribution of ownership and control;
- Ownership and operation by the community; and
- Compliance with regulatory authorities

The RealEx DAO services three key stakeholders:

1. **Community members:** The RealEx DAO helps communities of people work in unison to acquire, operate, and dispose of real assets. The goals of those communities will likely be as varied as the communities themselves; some may wish to pursue tokenization of real estate assets as a means of wealth creation, while others may view it as a method of creating social impact within their communities or as a tool to preserve environmental integrity. Regardless of the community's mission, the RealEx Protocol provides them with a platform on which to operate.
2. **Operators:** The RealEx DAO will make it possible for operators of real assets to leverage their intellectual property and services into DeFi using a ready-made interface. This will accelerate the adoption of asset tokenization as it makes it possible for an existing universe of operators to rapidly transition into this new industry.

3. **Users:** RealEx DAO's Protocol will eventually allow people to own fractional pieces of real assets via property-specific NFTs.

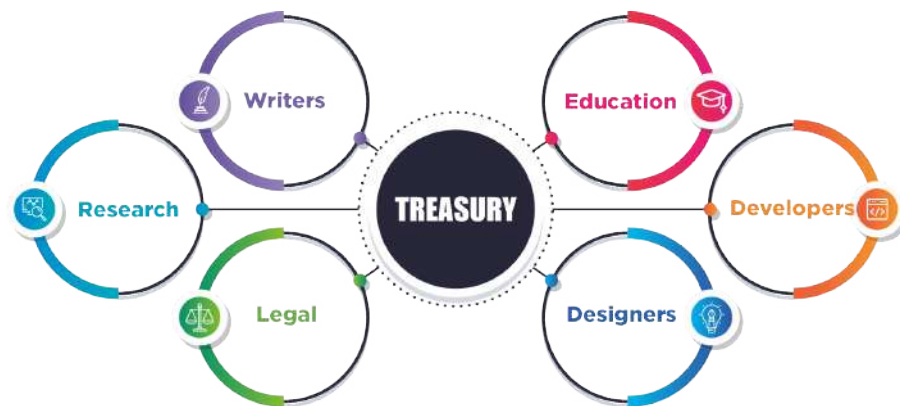
These stakeholders are serviced through the DAO's core functions, which cover the following three areas:



1. **Missions & Operations:** The DAO looks to create an impact in specific communities around the world. By identifying missions that are aligned with the DAO values, the DAO can more effectively acquire and operate the types of properties that support those missions. For example, the mission of helping people with student debt ties well to acquisition of student housing and apartment buildings, where people who have this type of debt tend to live. By acquiring those assets, the RealEx DAO can accelerate the mission of turning student debt into financial independence by helping this group own the places in which they live and study.
2. **Specialized Knowledge Work:** To build key components of the Protocol, and to ensure that the DAO continues to scale to serve the needs of the community, the DAO recruits community members that have specific skills sets that can be leveraged to fulfill an ongoing list of tasks to help continue to build and operate the technology, systems, and processes of the DAO. This includes development of technology as well as specific real estate work.
3. **Reference Application Implementation:** The RealEx Protocol serves as an open data and transaction platform to existing applications which may be utilized to serve the needs of the DAO. There are many moving pieces in a large ecosystem such as the real estate marketplace, and there are already many solutions to solve specific problems in those markets. The Protocol aims to create an interface where existing applications plug into the Protocol for the benefit of the community.

The implementation of the Protocol is general enough to make RealEx usable in multiple ways by different stakeholders with different economic models over the life of an asset. Although these are described here they are not necessarily comprehensive and it is expected other models will be developed over time. Specific examples of scenarios in which the Protocol will be used immediately by the DAO include:

- Providing fractional ownership of a specific asset (for example, the DAO acquiring a resort property in Costa Rica and issuing a NFT that is locked into the RealEx steadycoin, providing fractional interests in that property to all RealEx steadycoin owners).
- Providing fractional ownership of a pool of assets amongst a community (for example, the DAO buying a limited partnership interest in a network of solar farms and then returning yield from those operations to the DAO).
- Providing someone with access to a real asset (for example, booking a vacation resort villa in Hawaii when that resort is owned by the RealEx DAO).
- Leasing a real asset to someone (for example, renting a unit at the University of Texas, when that student housing center is owned by the DAO).



Operationally, the RealEx DAO format provides the greatest chance of inclusion and long term innovation and success.

The primary objective of the DAO is to identify general goals and values of the organization. This concept aligns with Harvard Business School Professor Bill George's management philosophy of *True North*. The next step is to identify key tasks that support those goals, and then devise a method to break tasks into assignable and accountable units of work.

Units of work are contributed by people skilled in certain areas to ensure their proficiency with the task at hand. The RealEx DAO expects contributors across the key areas shown in the diagram above.

Initially, the development of the RealEx DAO, RealEx Protocol, and RealEx asset vaults will be a highly manual process, requiring the work effort of several community members to define, assign, and monitor the initial process of the systems. Over time, the RealEx DAO will evolve from a start-up environment to a highly-functioning decentralized organization that incorporates the “3 Ps” by leveraging human capital (people) and technology (product) to enhance operating efficiency, reduce work effort (process), and control spending (control).

One of the key ideals around the RealEx DAO is to focus on quantitative metrics, versus relying on the emotional factors that typically drive human behavior in simple or complex organizations. All of the aspects of the RealEx DAO are measurable.

For example, real estate assets can be defined by a number of quantitative factors, such as annual operating income, geography, asset type, risk factors, historical performance, and ESG (environmental, social and governance) scoring. Likewise, liquidity pools can be quantified in terms of allocation, target yield, risk factor and automatic buy/sell provisions.

Real estate assets require ongoing maintenance and management and can be assigned by the DAO to professional services members within the community that have specific skill sets that can preserve the value of the RealEx Asset vaults. Factors such as location and design in real estate development are highly subjective, which is why the DAO would bid out and award supervision of more qualitative aspects of development to community members, or outside vendors, with a track record of performance in these areas of operations.

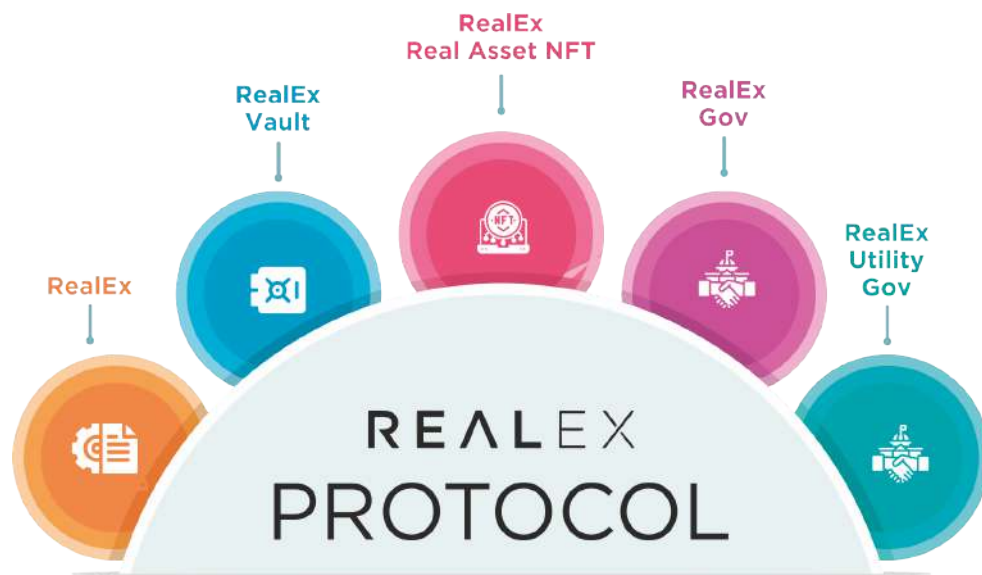
Crypto assets require monitoring and risk-mitigation strategies. While automated trading can assist in ensuring that the DAO's interests are served through constant monitoring and trading activity, there is a need for human oversight, which is a task that the DAO would assign to the qualified community applicants who seek this work. Even though RealEx is firmly dedicated to DeFi practices, it would not be unreasonable for the DAO to engage the services of a Capital Markets desk from a large trading firm to ensure the integrity of crypto trading and staking transactions.

As the size of the RealEx community grows, the DAO will continue to focus on building the rails of the decentralized processes required to effectively run the organization.

A key aspect of the DAO process is the concept of an annual strategy review combined with a quarterly planning program that outlines the tactics, resources, and development activities to support the long-term strategy. Annual plans will be submitted to the DAO for its vote. From there, specific tasks and actions will be defined and bid out to the community. At regular intervals, community member will vote on key decisions, much like an Investor Committee.

A monitoring process will ensure that tasks assigned to key community members are visible to the community, and when things go wrong, provide a mechanism to modify performance.

From a financial standpoint, the RealEx DAO incorporates best practices from accounting and applies them to decentralized finance. There are quarterly reports to the community with investor reporting typically associated with a publicly held company. Operational records are visible to community members, and multiple community members will be given multi-signature authority to move community treasury based on community agreed actions. Initially accounting and tax issues for the DAO will be outsourced to professionals with specific expertise in this area.



B. The RealEx DAO Protocol

The RealEx DAO Protocol (the “Protocol”) offers an open platform to coordinate mission-led real asset management. The technical infrastructure coordinates the pooling of yield-bearing real assets. This enables all of the community participants to capture any value creation from asset operations.

The Protocol can be used for assets that RealEx DAO owns, but it will also serve as a building block for others, as people will be able to use the Protocol to coordinate the benefits of tokenizing, staking, and using real assets that the DAO doesn’t own.

The Protocol is based on the Ethereum blockchain and will bridge to other blockchains in the future. This will offer maximum utility and pairing with liquidity while it supports integration with other protocols.

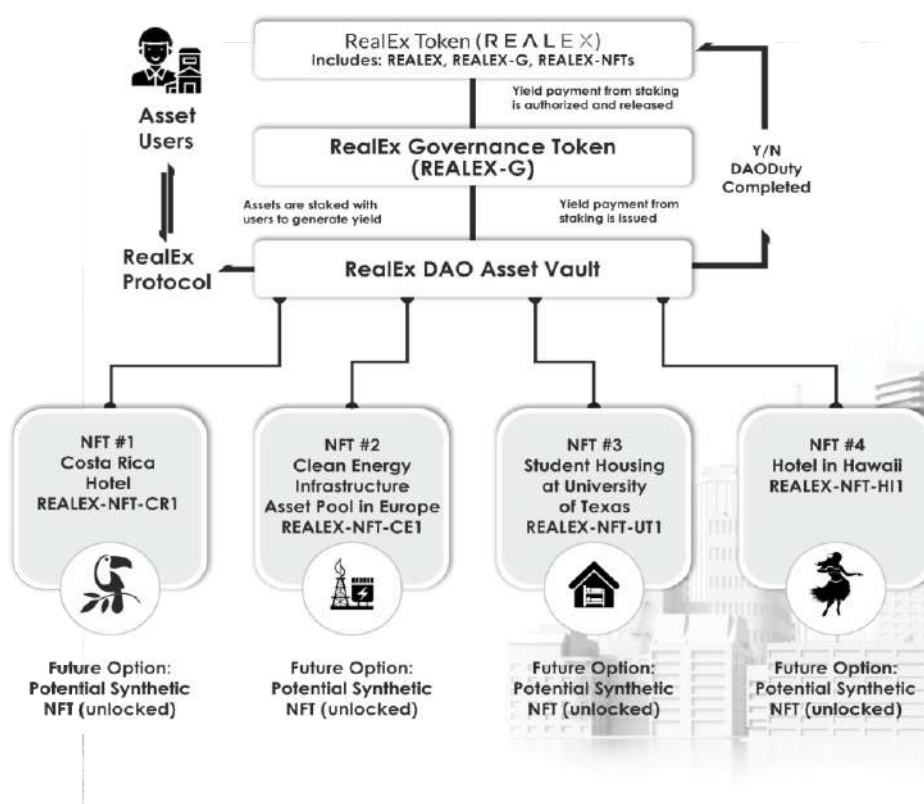
The Protocol comprises five components as reflected below in the high-level diagram. Each component is implemented as part of the RealEx DAO system to deliver the community members yield from the underlying assets.

1. RealEx Steadycoin

The RealEx steadycoin (REALEX) represents ownership of, and participation in, the RealEx DAO and its assets. Ownership of RealEx steadycoins provides fractional ownership of underlying NFTs for individual assets. Ownership of at least one RealEx steadycoin provides an opportunity to receive a RealEx Governance token (which requires work input by the community member). By default, all RealEx NFT rights are locked in the RealEx steadycoin.

2. RealEx DAO Vault

The RealEx DAO Vault (the “Vault”) is a series of smart contracts that coordinate the deposit, use, and withdrawal of RealEx NFT assets under management. After RealEx assets are deposited into the Vault, they are considered to be under management. The Vault will then manage all related money flow, such as the distribution of yield or stakeholder fees, the parameters around which shall be continuously decided by the DAO. The Protocol will be designed to support multiple vaults targeting various missions over time.



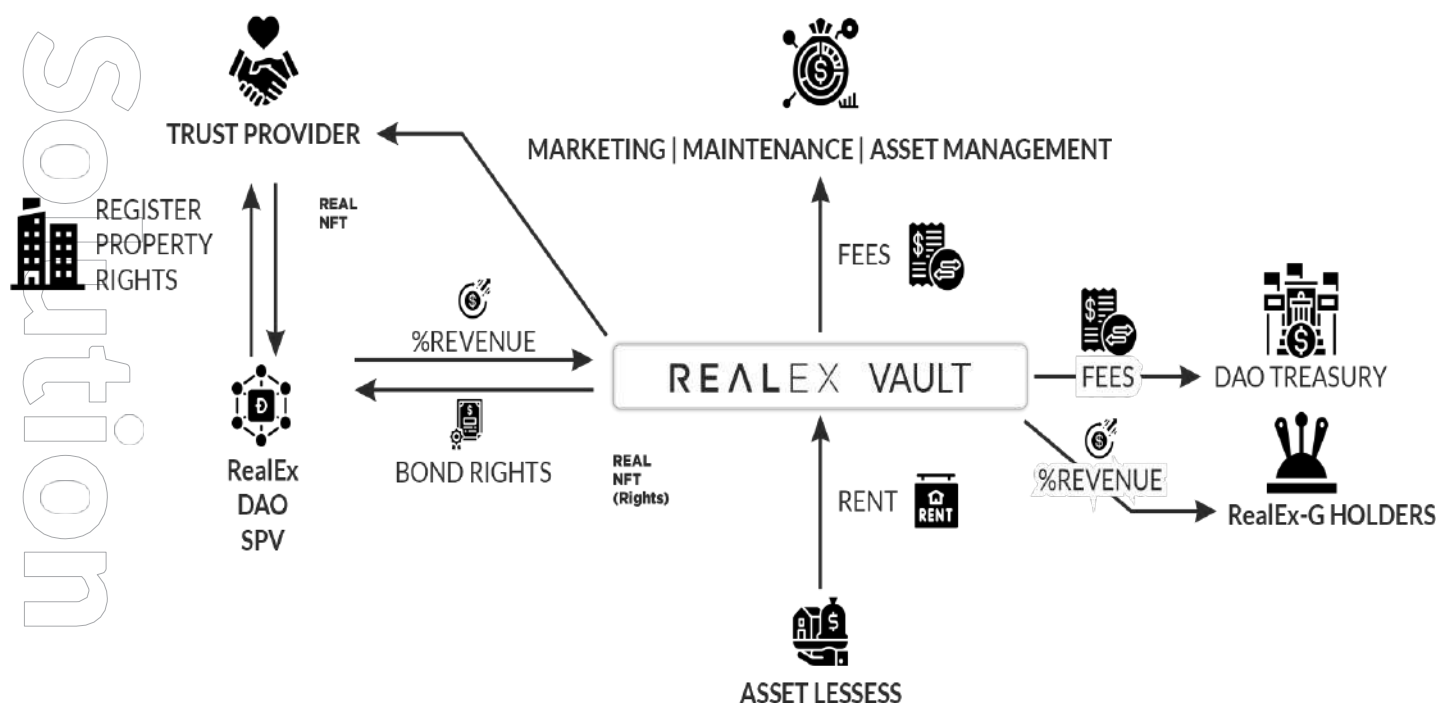
RealEx - G Token

The RealEx Governance token (REALEX-G) is a non-transferrable token that offers its tokenholders a right to yield from the Vault's assets in exchange for their active contribution to the RealEx DAO. This governance token may be issued to any RealEx holder as long as they actively participate in advancing the mission of the DAO, such as regularly voting on DAO proposals or actively contributing to RealEx Protocol's continuous technical development and operational activities.

Possession of the REALEX-G tokens provides a combined benefit of receiving distribution of yield resulting from staking assets in the RealEx DAO Vaults, in addition to rewards from the RealEx staking program. Token holders may forfeit their yield payments if they fail to contribute during any given staking period. RealEx G tokens are transfer locked, giving only the initial receiver the right to use them, which ultimately restricts their trade outside the remit of the DAO.

RealEx Real Asset Non-Fungible Token (NFT)

Each RealEx Real Asset NFT is a non-fungible token representing a single real asset to be stored in a Vault along with the asset's metadata. RealEx DAO coordinates with external real asset verification providers to mint REALEX-NFTs for specific assets that it acquires through purchase, lease, or option. These NFTs are then bonded into the Vault and provide a canonical on-chain reference to that real asset.



The RealEx NFT metadata will outline several key elements of the asset, including but not limited to:

- Property rights (e.g., property ownership versus lease)
- Management duties (e.g., the creation of an operating agreement, managers, accounting and performance reviews)
- Yield rights (e.g., payment of staking fees less expenses)
- All disposition rights (e.g., payment of proceeds from property or NFTs' sale)

The NFT will also contain key asset metadata:

- An off-chain reference to the real estate asset, such as a link to a county register record
- An off-chain reference to an ESG data feed of the asset
- An off-chain reference to the legal agreement purchasing the asset
- Asset information such as the address, geographic coordinates, one or more photos or other media assets

RealEx Utility NFT

The RealEx DAO imagines that in the future, once it deposits an asset, the DAO may choose to create RealEx Utility NFTs linked to a specific Real Asset NFT. These Utility NFTs would provide additional benefits for DAO members because of the underlying utility represented by the asset. For example they could be minted in limited batches and awarded like loyalty awards (like frequent flier miles) for stays in DAO properties to contributors. In some cases these utility NFTs could be locked or unlocked and traded peer-to-peer. Other financial uses include minting carbon credits with a verified attester, for example as a result of owning raw forest land. In this case, these credits, or fractions of credits, could be awarded directly to token holders for their use, or deposited in the RealEx Vault for management and yield optimization.

Cases in which the RealEx Protocol is used as a platform by outside parties.

- As discussed, the RealEx Protocol is an open platform and one day will not only be usable for assets under RealEx DAO's ownership, but will also be usable by people willing to gain the benefits of tokenizing assets that aren't directly under the DAO's ownership. For example, in the more distant future, the Protocol could be used for any of the following hypothetical situations:
- Making an NFT for a property to make fractional ownership possible (for example, creating an NFT pool for a ski house and selling those NFTs to your friends for them to buy a share of the property).
- Borrowing against a real asset (for example, acquiring a DeFi loan to pay for an apartment's purchase, which has been tokenized using the Protocol NFT maker).
- Crowdfunding an asset (for example, a community of people who want to leverage the Protocol to issue an NFT, raise funds using that NFT, and then use the funds to buy a property).

V. HOW THE REAL EX DAO EVALUATES, ACQUIRES AND OPERATES REAL ESTATE ASSETS

To see how the DAO will operate, we offer the use case of the RealEx DAO Asset Vault, which is under the Real Estate Desk's management. These are the DAO members responsible for the acquisition, management, and disposition of DAO's real estate assets within the RealEx Asset Vaults under the consensus of the community. Initially, there will be a single asset vault representing all the assets under DAO's management, but the system is being designed to support multiple vaults.

The RealEx DAO's first task when creating the Real Estate Vault is to articulate the values and goals behind this effort. From there, the DAO atomizes those ideals into a series of tasks, which lead to the process of selecting, evaluating, approving, acquiring, operating, and disposing of an asset.



A. RealEx Real Estate Asset Investment Governing Values and Goals

RealEx DAO is an ESG-driven real estate enterprise designed to democratize real estate ownership. RealEx reimagines real estate ownership by making real estate assets available to everyone while working in the favor of community members, stakeholders, communities, and the earth. RealEx DAO can acquire several different kinds of assets including direct ownership, debt placement, ownership through an investment fund, and options contracts.

The DAO's goals and values are as follows:

- **Profit** - RealEx DAO aims to maximize profit without compromising the interest of stakeholders, the community, and the environment.

- **Transparency** - RealEx DAO is designed to empower our community's involvement in the decision-making process. Asset-level metrics about real estate financials, effects on the environment, and community impacts are made accessible on the RealEx platform. The overall goal encompasses RealEx guiding investment decisions by leveraging the best practices in decentralized governance.
- **Protect the Environment** - RealEx DAO strives to operate with minimal impact on the environment, seeking opportunities in which we can leverage technology to improve the environmental impact of projects.
- **Help Communities** - As an impact-driven business, all stakeholders are taken into account. When selecting real estate projects, we consider tenants, community members, employees, local businesses, and municipalities.
- **Innovation** - The RealEx solution leverages technology to solve problems. Additionally, the platform strives to conduct real estate operations more inclusively and sustainably.

B. Key attributes of properties acquired by the RealEx DAO

RealEx DAO will pursue strategies that optimize the usage of energy and resources to make buildings more efficient and optimize operating revenue. RealEx will also add ESG technologies that can act as "oracles" for real estate assets' tokenization, working with local communities to create tax credits/operating revenues running as easements along with the buildings. Hence, it will create endless revenue streams for RealEx's assets rather than being in the ownership rotation. RealEx will seek yield along with public benefit through:

- Optimizing the energy efficiency of existing buildings and integrating smart technologies to reduce operating costs,
- converting underutilized commercial space into affordable housing,
- re-imagining the usage of excess hospitality inventory by turning it into workforce housing,
- accelerating redevelopment in economic opportunity zones,
- designing innovative work-life balance for assets,
- facilitating the commodification and trade of carbon emission credits, riparian rights, and conversion of mineral rights. This is to mitigate global warming and preserve sensitive environmental areas.

C. ESG and Profit - The New Bottom Line

The 21st Century saw a rapid growth in ESG values and implementation (Kell) throughout capital markets and the corporate landscape. In a 2005 landmark study, "Who Cares Wins", author Ivo Knoepfel argues that environmental, social, and governance measures should be embedded in capital markets.

As a result, there will be better investment markets and more sustainable societies. RealEx considers the integration of ESG into the core of the RealEx solution essential to ensuring maximum benefit to society.

"Who Cares Wins" included a study on a sample of 180 companies validated the proposition that "high sustainability companies outperform over the long-term, both in terms of the stock market and accounting performance (Eccles et al)." More companies are reporting ESG publicly as financial priorities are aligning with ESG values.

Even though more companies are reporting ESG, lack of data and transparency make their actual impact assessment difficult. In 2019, only 29% of S&P reporting companies obtained external assurance on their sustainability information. RealEx has the opportunity to ensure that social, environmental, and governance impact metrics are built into its model. The RealEx DAO's proprietary ESG scoring system will drive decision-making at different levels: asset and portfolio level. These metrics are shared on the platform so that the community may understand the motivation behind the RealEx DAO's choices. Every potential project goes through a multi-step consensus-building process. First, they go through rigorous due-diligence, after which they are layered on an ESG-focused decision-making guide. This guide has criteria weighted appropriately to help our DAO evaluate projects. Eventually, our entire community has an opportunity to vote on the acquisition or disposition of assets in the RealEx Vaults.

Within equity markets, this type of reporting is advancing day-by-day, with indices like the FTSE 4Good Index Series tracking companies based on their ESG performance with detailed metrics for eligibility.

In the real estate world, it is becoming quite common for REITs to report on ESG, with 84 of the top 100 REITs, representing 89% of the total equity market capitalization, reporting ESG publicly and over half issuing stand-alone sustainability reports. This is up from 78% in 2018 ("REIT Industry ESG Report").

While reporting for large REITs is the ESG metrics' focus, the RealEx platform offers granular transparency of asset-level ESG metrics.

D. ESG Scoring at the Asset and Portfolio Level

With the onset of the investment platform, establishment of the RealEx real estate portfolio is taking place with specific benchmarks. Over time, based on market reaction to the RealEx business model, ultimately reflected in the value of the steadycoin, this portfolio composition may evolve.

The scoring system is based on the Target Asset Metrics which are defined by the DAO and are subject to change, depending on the needs and preferences of the community.

Initial Asset Baseline Metrics	
Net IRR	7.0%
Equity Multiple	1.6x
Cash Yield	5.0%

Scoring Range:

Assets are scored 0 to 5 stars, with 5 being the highest score possible and 2.5 as the minimum score to pass underwriting and be shared with the DAO. The scoring system is designed such that, relative to the defined baseline metrics, a 5.0-star property far exceeds the DAO's asset goals while a 2.5-star property just meets them. Of course, the rating system is only a starting point, as the DAO ultimately has the final say on which assets are to be pursued and which are to be discarded.

Some examples of asset scores are below:

5 Stars: A rare asset which returns double the target financial expectations and scores very strongly in ESG. Example (using the baseline metrics above): A property which has a projected IRR of 15%, Equity Multiple of 3.2x, Cash Yield of 6%, low risk, and a "High" ESG Score of 90 (see below) would score 5 Stars.

4 Stars: An asset which performs very strongly in both financials and ESG. Example: Projected IRR of 12%, Equity Multiple of 2x, Cash Yield of 3%, and a "High" ESG Score of 90 with low risk would score 4 Stars.

3 Stars: An asset which performs strongly in either ESG or financials, and performs average to above average in the other category would score 3 Stars. Example: An asset which exactly meets the DAO's financial baseline metrics, and scores "Good" in the ESG Category with low risk would score 3 stars.

2.5 Stars: This is the minimum for an asset to be considered by the DAO. An asset which scores 2.5 stars performs may be above baseline metrics in the ESG or financial category but below targets in the other. An example of a 2.5 star property which may be considered by the DAO is a Social Impact project which scores extremely high in ESG, but does not meet the DAO's financial targets: IRR: 3%, Equity Multiple: 1.2x, Cash Yield 2%, ESG Score: Near Perfect 99 out of 100.

Below 2.5 Stars: Assets scoring below 2.5 stars are not to be considered by the DAO.

RealEx DAO Asset Scoring Chart



F = Financial Score (1-100)

Financial Score = $((IRR + EM + CY) / 3) * 60$

IRR = Internal Rate of Return Multiple

Calculated as follows: (Asset Projected IRR / RealEx Baseline Asset IRR)

EM = Equity Multiple

Calculated as follows: (Asset Projected EM / RealEx Baseline Asset EM)

CY = Cash Yield Multiple

Calculated as follows: (Asset Projected CY / RealEx Baseline Asset CY)

So that an asset which exactly meets RealEx Asset Targets will score 60 out of 100 points.



ESG = Environmental, Social, Governance Score (1-100)

• Environmental (scored 0-33.333)

• Energy Efficiency

• Renewable Energy Production/Consumption

• Carbon Emissions

• Water Efficiency

• Water Quality

• Reuse of Stormwater and greywater

• Waste management

• Recycling

• Social (scored 0-33.333)

• Biophilic Design

• Active Design Features

• Indoor Air Quality

• Affordability Index

• Effect on Crime

• Employment Creation in Local Community

• Support Local Businesses/Charities/Organizations

• Governance (scored 0-33.333)

• Stakeholder Involvement

• Transparency

*ESG scoring criteria differ based on the asset class. Here are several examples of scoring criteria:



Score Weighting: ESG

• First REALEX Utility NFT use

• 50 = Average ESG (net-zero, projects that do no harm but aren't creating a substantial impact)

• 70 = Good ESG (projects that make a measurable positive impact on their communities and environment)

• 90 = High ESG (projects that are setting a new standard for creating impact)



Score Weighting: Risk

• R = Risk Factor / 100 where Risk Factor =

• 0 = Low Risk

• 10 = Medium Risk

• 20 = High Risk

• Risk Factors = Likelihood of loss of capital, asset diversity, track record of developer, market speculation

Asset Scoring Formula: $((F \times .6) + (ESG \times .4)) \times (1-R)) / 20 =$
Overall Asset Score Stars Out of 5

RealEx DAO Asset Scoring Chart Example



Since the project exceeded the 2.5-star requisite score, the DAO community will take it under consideration. Improvements that lead to higher ratings for the project come from a value-added plan. This improves the environmental, governance, and social impacts of the project. In turn, this increases the ESG score. For example, this project's sponsor could install additional energy-efficient technology in the building, and open up governance to gather more input from multiple community stakeholders. Key risk factors lie beyond the sponsor's control and cannot be changed.

E. The DAO Votes

The asset is presented to the DAO community for a vote once it is underwritten and passes the minimum score of 2.5 stars. Take a look at what follows next:

RealEx DAO: property coordination proposal ready for vote

- Real token holders review the recommendations of the underwriting team
- Real token holders vote on Property coordination proposal (Deny/Approve)

When proposal approved, property / portfolio owner will do the following:

- The property's owner sells the ownership and/or leasing rights to a RealEx DAO-owned Holding Company (DAO HoldCo) in the origin country. This is the legal entity referred to as RealEx Asset Vault. Following that, the DAO issues RealEx-NFTs that represent ownership, leasing, or revenue rights of the subject property or properties' portfolio in the Asset Vault.
- The issuance of the RealEx-NFT amounts to the property's sale, lease, or interest. This issuance can legally take place on any site or marketplace of the sellers' choosing.
- To coordinate property yield, the DAO HoldCo would include information about the RealEx-NFT and the DAO's responsibilities.
- The DAO HoldCo would then pledge to stake the NFTs in the currency of their choosing.
- NFTs can have different prices, traits, and rarities.
- Various NFTs can unlock access in multiple ways. For example on resort property, an NFT is usable like frequent flier miles. This allows the NFT holder to trade it for either a hotel stay or rent accommodation.
- A few NFTs are for special things, like IoT sensors. If you buy those along with a fraction of the property, you can also acquire rights that let you participate in cashflow by selling data.
- Some NFTs are synthetic representations of several types of property. These properties are usable for peer-to-peer trading networks and customer loyalty programs. In addition, these are usable for NFT collectibles like baseball cards as well.

- On successful completion of all the assets' sale in the property or portfolio, the NFTs automatically move to the relevant owners (or are claimed by them). Then, through the DAO, the NFTs are deposited into a Real DAO Vault.
- When the DAO HoldCo acquires either the property or its rights directly for tokens versus fiat currency, the DAO releases additional RealEx steadycoins.
- These tokens accommodate the assets' increased value under DAO management.
- The RealEx Vault could be specific to geography, housing type, or general vault.
- Real-NFT owners receive a share of Real tokens proportionate to their holdings

F. Ongoing Management and Reporting

Each asset has its own development and operating team that RealEx DAO contracts to oversee asset management. The managers provide monthly financial and operating reports. If these reports meet key metrics, operations continue. If they fall below key metrics, a flag is raised and the DAO's asset management team conducts a review of the asset.

The monies from the property's initial revenue are used to pay the property management team. Any additional revenue is considered a yield that arrives via the RealEx Protocol to the DAO Asset Vault. Once there, the DAO distributes it to the RealEx steadycoin owner only if they (i.e. token owner) have completed their obligations as per RealEx Governance token. (See illustration under RealEx Tokens on page 13).

G. Current Asset Pipeline for RealEx DAO: The Proposed RealEx DAO Real Estate Vault

Project Name	Score	Location	Partner	Class	IRR	Minimum Allocation	Maximum Allocation	ESG Rating
Impact Values Portfolio	4.19	North America	Confidential	Real Estate	9%	\$1,000,000	\$15,000,000	Excellent
RealEx ESG Infrastructure Portfolio	4.14	North America	Confidential	Clean energy	10%	\$25,000,000	\$150,000,000	Excellent
Confidential Student Housing Buildings	3.75	North America	Confidential	Student Housing	11%	\$10,000,000	\$50,000,000	Very Good
Confidential Resort Development	3.75	Hawaii	Confidential	Real Estate	10%	\$15,000,000	\$105,000,000	Good
Confidential Apartment Building	3.31	San Francisco	Confidential	Multifamily	5%	\$35,000,000	\$35,000,000	Good

D. Other Asset Vaults Held by the RealEx DAO

The RealEx DAO has collectively decided to acquire pools of inflation-resistant assets with its liquidity generation proceeds. There's a two-fold rationale for this. By having assets underpinning the token, the RealEx steadycoin will be able to maximize price stability. Moreover, because real estate assets are expensive, an asset owner won't let any new DeFi enterprise experiment on a multi-million dollar apartment building or hotel. Owning the assets provides RealEx DAO with a sandbox of high-quality properties on which to develop the RealEx Protocol and accelerate the adoption of our technologies.

The volatility associated with DeFi and crypto marketplaces presents investors with a dilemma. Risk huge losses for huge returns, or continue to pursue traditional investment pathways, which are not presently catching the eye of younger investors? A large proportion of crypto investors are younger, with 74% of cryptocurrency owners falling between the age of 25 and 44. The RealEx model is built on a fundamental premise that DeFi is the future of global commerce. However, current standards of transparency in the crypto market pose important upcoming challenges for the sector. For instance, in the case of China, we see how rapidly crypto activities can be halted in a jurisdiction, potentially bringing crypto trading to a full stop.

With a lack of transparency around their make-up, holdings, technologies or asset backing, cryptos are subject to wild speculation which often creates risky situations for investors. In 2021 over \$1.9BN of crypto was stolen. While the value of the leading currency BTC has gone up spectacularly since its inception, this year we have seen the leading crypto currency go through a gut churning roller coaster where it lost half its value in late spring, only to be charging above the \$67,000 USD level in November 2021.

RealEx addresses issues of market volatility by creating transparency while owning real assets and pools of cryptocurrencies. These real crypto assets create a "Floor of Value," below which the token price rarely drops. To address concerns of market volatility, the RealEx model embraces the impact that social media (Vargas) and public figures (Browne) have on cryptocurrency and stock prices.

RealEx liquidates tokens in the marketplace if the market creates a speculative bubble in RealEx digital asset pricing. The proceeds from any liquidation of the steadycoins can then fund the purchase of real estate assets and crypto. If the price of the RealEx steadycoin drops below its assets' value, RealEx DAO's treasury function allows it to start buying back tokens at a price below the value of its assets.

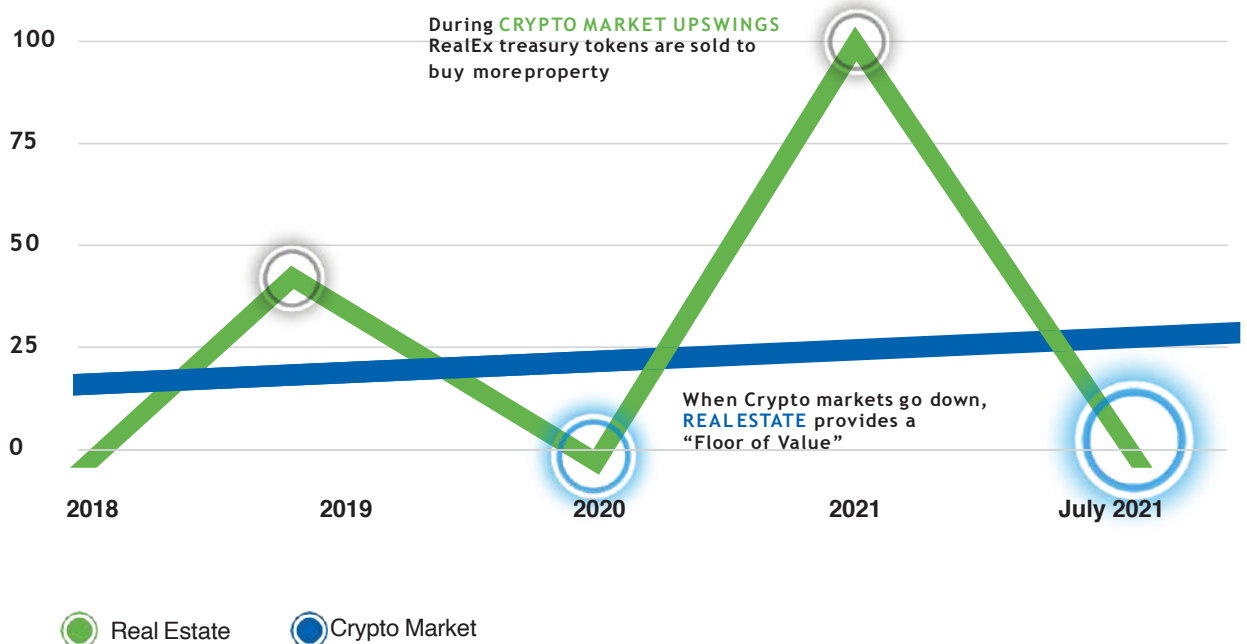
VI. WHAT IS A STEADYCOIN?

A **steadycoin** is based on the value of inflation-resistant assets, like real estate. This is different than a stablecoin which is based on fiat currency. The real assets create a “floor of value” under the token pricing. As a steadycoin, RealEx has three categories of assets that serve as a strategic hedge against market volatility and inflation. These include real estate assets, crypto reserves/liquidity pools, and technology investments.

A. Real Estate Assets

RealEx DAO is similar to a real estate co-op as it allows a community of unrelated individuals to purchase properties. Like a family ski house, the property has underlying value regardless of how the property is used. If assets aren’t used by the community of owners, any rental payments or sales will pay for the company’s operating expenses. Then, the remaining revenue will be paid as dividend profits to investors.

Traditional real estate assets aren’t as liquid as stocks. Instead, they have longer acquisition-disposition cycles and are less susceptible to daily market fluctuations. Historically, most real estate assets appreciate in value over time and are less sensitive to inflation. In addition to these traditional real estate assets, RealEx also reserves the ability to own other forms of property through



Caption: The “Floor of Value” created by real estate is the reason why RealEx is considered the first “Steadycoin”. Even in volatile market conditions, the value of the steadycoin is unlikely to remain below the value of the assets for long.

private and public real estate investment trusts or partnerships. These funds often provide more immediate exposure of asset classes and greater liquidity. RealEx may also acquire property purchase options. These options provide additional coverage in support of our token price or as a way to hold properties until the bonding curve cycle moves in the DAO's favor.

RealEx DAO Real Estate Vault

Project Name	Score	Location	Partner	Class	IRR	Minimum Allocation	Maximum Allocation	ESG Rating
Impact Values Portfolio	4.19	North America	Confidential	Real Estate	9%	\$1,000,000	\$15,000,000	Excellent
RealEx ESG Infrastructure Portfolio	4.14	North America	Confidential	Clean energy	10%	\$25,000,000	\$150,000,000	Excellent
Confidential Student Housing Buildings	3.75	North America	Confidential	Student Housing	11%	\$10,000,000	\$50,000,000	Very Good
Confidential Resort Development	3.75	Hawaii	Confidential	Real Estate	10%	\$15,000,000	\$105,000,000	Good
Confidential Apartment Building	3.31	San Francisco	Confidential	Multifamily	5%	\$35,000,000	\$35,000,000	Good

B. Crypto Currency Liquidity Pools and Reserves

The RealEx model envisions reserving a percentage of tokens in the form of a treasury and then staking tokens in liquidity pools. These reserves are held for two reasons. The first reason is to ensure that there are adequate capital reserves. This is in case the real estate assets require additional capital to manage an unforeseen event. The second reason is to create liquidity for RealEx steadycoins while generating yield for the DAO community.

The RealEx DAO treasury will operate like a Central Bank, therefore, decisions will be made using data-driven modeling after releasing tokens. When RealEx notes a need to sell more tokens to generate liquidity, RealEx will sell more tokens. When there is a need to tighten liquidity, RealEx will buy tokens back using treasury reserves. Unlike a Central Bank, the RealEx treasury operates with complete transparency. Governance and ongoing modeling helps the community understand the best time to release and buy back treasury reserves.

As a by-product of this treasury activity and the need to maintain adequate reserves on hand, RealEx DAO retains a large amount of stablecoin and crypto reserves. These are from investors that have traded them for RealEx steadycoins.

C. Technology Investments

As part of the ongoing investor community development, RealEx DAO fosters an environment that generates innovation. The goal is to allow the community to build technologies that will accelerate the democratization of real estate ownership and tokenization of real assets.

The RealEx DAO model contemplates the development and use of open-source technologies to secure investors, protect assets, and expand the promise of decentralized finance as it relates to real assets.

RealEx ultimately seeks to become a medium of exchange and store of value. The RealEx model's central premise is that a community of curious and interested developers and entrepreneurs will build the apps and plumbing required for the evolution and growth of real estate tokenization. RealEx DAO isn't the sole creator here. Instead, the DAO supports other developers' technological developments by investing money and awarding RealEx steadycoins to individuals and companies endeavoring to create applications supporting the growth of an ecosystem.

In a sense, the RealEx Protocol will function similar to an app store, while RealEx steadycoins function like that payment system for the apps. The RealEx DAO will pay to support development of some applications, and create opportunities for the community to build other technologies that adhere to our shared vision and values.

TABLE: Products and apps to be developed by RealEx DAO community

Product	Description
RealEx NFT Creator	Application that allows a property owner to generate NFT for property
RealEx Title API	API that allows existing title search program to integrate with RealEx protocol
RealEx Property Manager API	API to link existing property management systems to RealEx Protocol
RealEx multiple listing service API	API to link existing MLS systems to RealEx Protocol
RealEx PropTech API	API to link existing real estate listing sites to RealEx Protocol
RealEx "Pay my rent" App & API	API and App to allow landlords to enable payment via RealEx Steadycoins and RealEx NFTs
RealEx Property Staking API	API that allows property NFTs to be staked on RealEx Protocol. This is a DeFi lending platform for property owners.
RealEx Vacation Rental API	API that allows rental management sites to use RealEx Steadycoins for payment of nightly rental
RealEx Community Builder App	App that allows groups of people to create an NFT and use it to raise money to crowdfund project

D. The RealEx Foundation: The Platform for RealEx Social Impact

To support better development of the cryptoverse, RealEx will launch the RealEx Foundation (www.realex.foundation). The RealEx Foundation will be a growth- focused organization that will release educational content to help increase the level of crypto knowledge. This knowledge will range from basic ideas like creating a wallet to higher level concepts like yield farming breakdown and contribution to the RealEx DAO. The foundation aims to empower current and future crypto holders by making the ever-evolving space easier to understand. Along with general crypto-related blogs, articles, and videos, RealEx foundation will also release up-to-date project related information on progress and milestones.

There are 3 broad themes the foundation will cover:

- How to Start with Crypto
- How to Learn Crypto
- How to Help RealEx's Mission

RealEx DAO plans to award 10 million RealEx steadycoins to the Foundation using to promote the foundation's initial growth and the patrons' development.

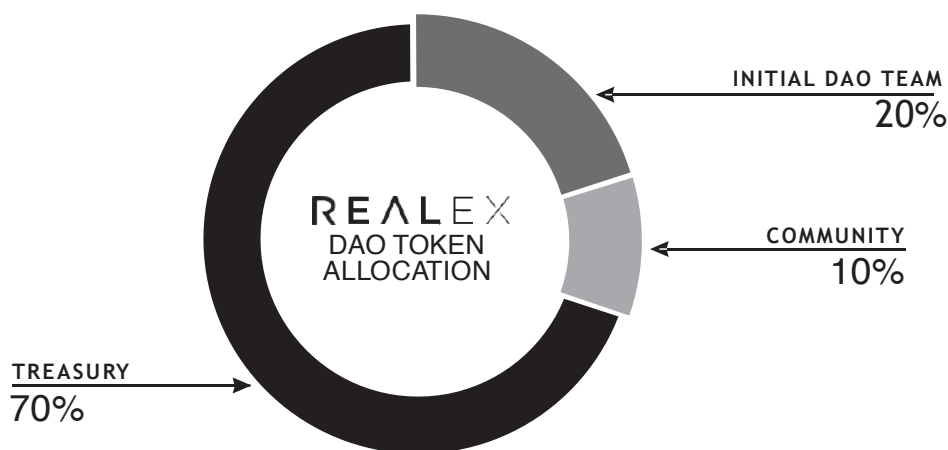
At present, the foundation has identified the following goals to award the token allocation:

1. **Student Debt Grants:** RealEx Foundation will launch a program designed to award student debt holders tokens as payment for performing services for the program. Services may include surveys for information requests regarding project interests and potential venture suggestions for RealEx.
2. **Social Impact Awards:** Along with tackling student debt, RealEx aims to provide aid on other social challenges that act as barriers against financial independence. Whilst broad, this category isn't limited to financially-related social justice projects only.
3. **Developer Awards:** As discussed earlier, the RealEx Protocol will be an open platform for non-custodial mission-led real asset management that can scale to be accessible to everybody who wishes to utilize it. However, RealEx will need to lean on communication with the community to build the infrastructure required to achieve such a goal. To help with the buildout of the Protocol, developers will receive RealEx steadycoins. RealEx intends to create a list of bounties for immediate development needs with similar payments.

Overall, the RealEx Foundation implementation is for the betterment of the people participating in crypto. Furthermore, it will make educational content accessible to the public through a central location.

E. Steadycoin Tokenomics

The RealEx DAO plans to issue 1 billion RealEx steadycoins. They will be released over time to maximize the benefit of the community.



1. Initial Distribution of RealEx steadycoins from the RealEx DAO treasury to community members

The DAO plans to release a set number of tokens annually based on predetermined bonding curves that the DAO's communities' data science team generates. Currently, the DAO has assigned this development task to Longtail Financial, a DAO community member group that specializes in this field of expertise. Below, you can learn more about their early stage development efforts.

The sequence of token release is subject to changing market conditions. For 2022, the community aims to sell tokens. The resulting proceeds will be usable in the collection of technology development funds for RealEx DAO, RealEx Protocol, and real asset acquisition.

At a certain point (likely 2040) all RealEx tokens will be issued.

2. RealEx Token Awards for Investor Staking Lock-Ups

Similar to most cryptocurrency launches, the RealEx DAO anticipates extreme market volatility for the RealEx steadycoin. The RealEx DAO is focused on policies and guidelines that can reduce that volatility and create a stable bonding curve.

To reduce volatility, the RealEx DAO plans to offer staking incentives for early investors in the community to lock-up their tokens. Yields are paid in RealEx steadycoins.

F. How to value a Steadycoin

The RealEx DAO maintains assets to ensure some value for the token and to provide properties on which RealEx Protocol development can be tested.

Naturally, the first question from a community member is “What is the fair price for the RealEx steadycoin?” And the second most common question is “What the steadycoin’s price is based on?”

This paper offers a guide to what the value of a steadycoin should be based on. The DAO’s current position is that we should look to the concept of Net Asset Value (NAV). The authors believe that this model is more applicable for a steadycoin than other valuation models such as a traditional P/E (price to earnings ratio) or Willy Woo’s innovative NVT ratio.

The NAV model makes more sense because while this paper’s authors can’t predict the RealEx steadycoin’s future price, we can reasonably predict the assets’ value inside the RealEx DAO vaults. Historically, the type of real estate assets the DAO is targeting grow at an average rate of 5% and have generated 5-15% staking returns. The crypto assets in the vaults have historically grown at nearly 900% per year and provided 20%+ staking returns. It is likely that as crypto matures, the year-over-year price increases and staking premiums will moderate.

So here is a place to start the discussion. Please note: **This information is for academic purposes only. It is not a guarantee of returns or a projection of future value. Do not purchase RealEx steadycoins based on this data.**

1. What is the price for the first RealEx steadycoin release?

A key input in this model is the RealEx steadycoin price for when it is released publicly (tokens were sold to date as part of seed funding for RealEx). The RealEx DAO will conduct a Fair Launch Auction, based on the Balancer platform, to establish the initial price discovery for the token. DAOs similar to RealEx, such as aKLIMA, have recently used this platform to raise capital and conduct price discovery. Prior to that, we offer the work of community members who have designed an elegant model to predict token pricing.

2. Bonding curve model for RealEx steadycoin release pricing

The data science team at Longtail Financial has put together a bonding curve model that allows community members to create their own RealEx valuation scenarios. The model is currently under development and has new features added regularly. Version 1.0 of the bonding curve model was designed to evaluate potential pricing scenarios as the steadycoin was launched. ***The model offered a result of \$3.00-\$5.00 per token based on the degree of success in acquiring market interest.***

The RealEx DAO bonding curve, steadycoin valuation, and student debt repayment calculators will be released publicly via the RealEx DAO's GitHub and Discord channel in the weeks leading up to the initial steadycoin offering.

3. **RealEx DAO token valuation based on a steadycoin / NAV (net asset value) model**

NAV is usually associated with ETFs (exchange traded funds) and mutual funds. It is the value of assets under management, divided by the number of shares issued. When the value of the underlying assets change, or more shares are issued, the NAV changes.

In DeFi, we typically associate a NAV measurement with a stablecoin. This is generally valued on a 1:1 basis with the underlying assets. Typically this asset is based on fiat currency, which makes it subject to inflationary pressures. RealEx is a steadycoin, which is a token based on assets that appreciate in value and are not susceptible to inflation. There are several considerations when modeling the NAV value of a steadycoin.

A NAV valuation divides the value of the steadycoin assets by the number of tokens. This stands for the core value proposition of a "steadycoin".

$$\mathbf{P(token\ price) = AUM\ (assets\ under\ management) / SO1(tokens\ issued)}$$

But, things don't remain as linear because we have to consider the concept of lag. You can not acquire real things as quickly as digital representations of those things. There's always a lag between the time the DAO takes to raise funds and when the assets are actually purchased and operational. If the price of the RealEx Steadycoins rises dramatically, the ability to purchase more assets will rise accordingly. Conversely, if the price rises less dramatically, the resulting asset pools will be smaller. Lag (L) is typically expressed in days. For a steadycoin with a rapidly escalating token price, there can be a significant lag between token price and AUM with a "catch up" in price potentially taking years. This is due to the logistics of identification, selection, voting, and acquiring assets.

$$\mathbf{L\ (lag) = AD\ (acquisition\ date) + DS\ (days\ to\ stabilization)}$$

A typical real estate asset will take some period of time to source, acquire, and season, even if it already exists. The shortest period of time is typically one year. For development projects, the time period can be many years, or even decades. When calculating lag, it is important that the programmer identify the stabilization requirement for the asset. As a general rule, the time at which the steadycoin price will cross with its NAV value is typically when the growth of the underlying assets is greater than the increase in steadycoin price for a period of at least 5-7 years. However if the steadycoin starts with an entire

portfolio of seasoned assets that timeframe can be shorter, or if the steadycoin experiences dramatic price volatility early in its lifecycle, that lag could be much longer.

If the DAO has selected the right assets, the value of those assets should grow, but their value can go down. For the last several years, the overall trend for real estate and crypto has been an increase in value. In turn, this drives a higher token price regardless of any inflationary pressures. Asset value (AV) appreciation or depreciation is calculated as follows:

$$\text{AV (asset value)} = \text{AV (acquisition value)} \times \text{AR (appreciation rate)}$$

The token prices may go above or below the underlying asset pools. This presents a valuable opportunity for the community to benefit from the value change by buying or selling tokens. The Spot Value of the token at any given time may be above or below the value of the assets (or projected value of the assets (when Lag is factored). This results in a buy or sell signal to the market. If the SV is more than 1, it means that the token is trading for less than its asset value. The spot value concept is merit-based when the token's annual increase is in the same range as the appreciation of the asset pool. Our model shows this taking place 5 to 7 years following the token launch.

$$\text{SV (Spot value)} = (\text{AV (asset value)} / \text{SO1 (tokens issued)}) / \text{TP (Token Price)}$$

Staking awards are granted to investors who purchase RealEx steadycoins. These awards are incentives for investors to hold their tokens. This helps stabilize the token price. The awards are paid in RealEx steadycoins based on the purchase price of the token. Staking awards would need to be included as part of the release of any treasury steadycoins from the DAO vaults. To calculate the impact of staking awards on the total supply of tokens, you calculate SA (Staking award).

$$\text{SA (staking award in tokens)} = (\text{TV (Token value)} \times \text{A1 (staking award)}) \times \text{T (term in years)}$$

4. RealEx Steadycoin/ NAV Model Sandbox

We invite DAO community members to devise their own RealEx steadycoin price projections using the equations outlined above.

When building models around steadycoin valuations, community members will discover that there is typically a crossover point, where NAV overcomes historical speculative pricing for crypto, occurring between 5-10 years after the launch of the steadycoin.

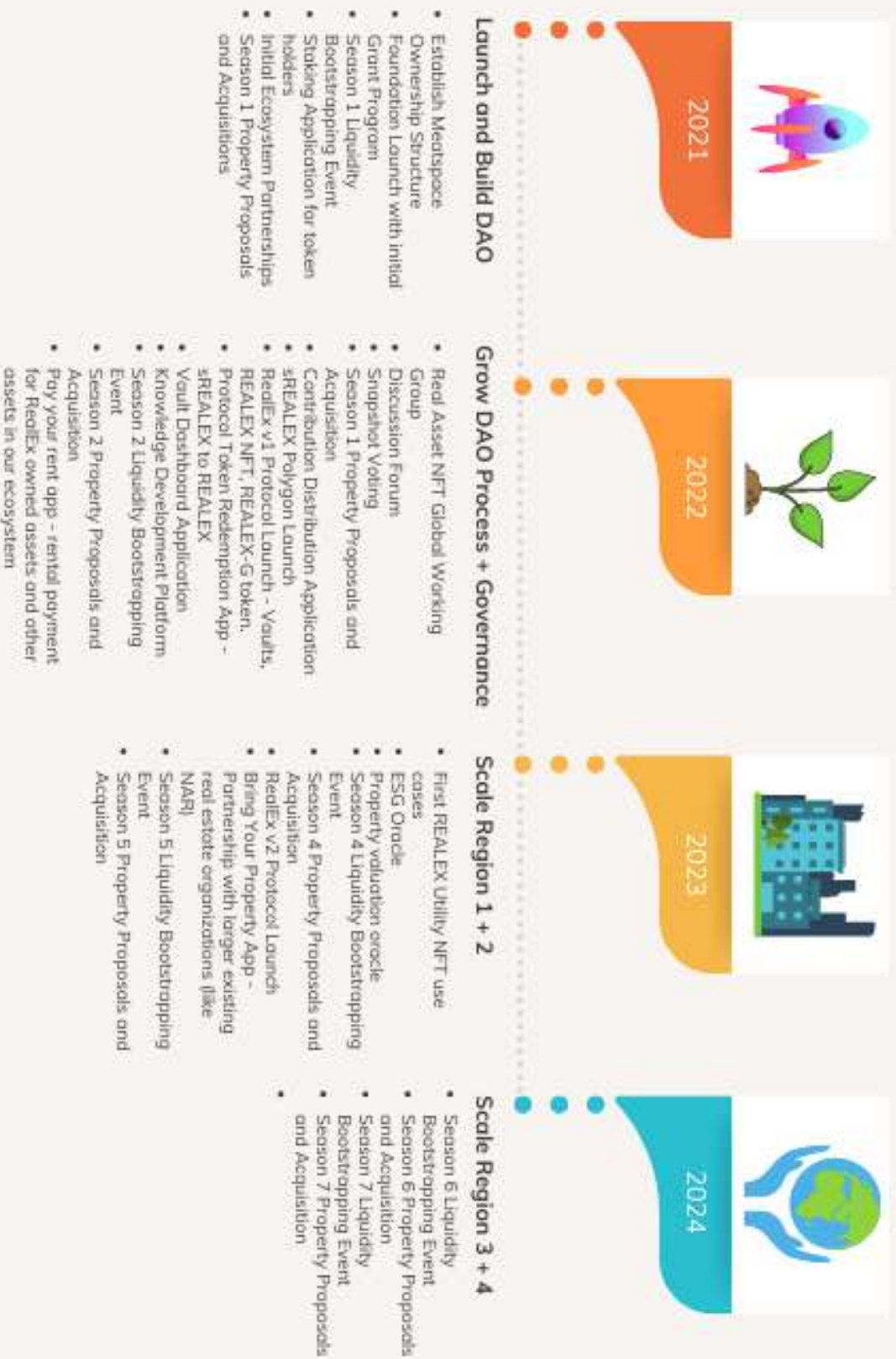
The longer the token price period progresses upwards, the further away that cross over point will occur. Moreover, the DAO can modify the token release from the treasury to ensure the sale of tokens at optimal times based on price acceleration.

This information is for academic purposes only. It is not a guarantee of returns or a projection of future value. Do not purchase RealEx steadycoins based on this data.

G. How can you purchase RealEx steadycoins?

The RealEx DAO will announce plans for liquidity generation events to support the launch of the protocol in the coming weeks. To stay up to date on offering details be sure to join the RealEx DAO Discord and Telegram channels. You can [also see investment opportunities on \[www.realex.io\]\(http://www.realex.io\)](#).

RealEx DAO Milestones



VIII. SUMMARY & CONCLUSIONS

As you have learned from this whitepaper, RealEx is the first real estate-backed cryptocurrency. RealEx has been created by the RealEx DAO ([decentralized autonomous organization](#)) and aims to democratize real asset ownership and empower billions of people to participate in wealth creation through decentralized finance.

One of the key elements of this social enterprise is the creation of the first **steadycoin**, a cryptocurrency backed by inflation-resistant hard assets (not fiat currency), which offers the potential of yield to the owners, and provides a medium of exchange. The RealEx steadycoin will be launched on the Ethereum blockchain under the symbol “REALEX”.

RealEx DAO will use its steadycoin to fund the acquisition of real estate and crypto assets, which provides the underlying value of the cryptocurrency. Proceeds are also used to support the continued development of the core technology platform (the “RealEx Protocol”) on behalf of the community.

The RealEx DAO will build the RealEx Protocol, which is an open source transaction and data layer built on Ethereum that will empower anyone to integrate their own assets or software into RealEx. The RealEx Protocol will be designed to be an app store for tokenizing real assets.

We invite you to become a member of the RealEx DAO community. Prior to the public release of our steadycoin, you can join the DAO, and receive a token award, by visiting our Discord or submitting an application at the [realex.foundation](#) site. Those interested in investing may find the [realex.io](#) site of interest.

The RealEx DAO will certainly evolve rapidly in the coming months and over the next few years. We invite you to be part of that process and join us for what could be a chance to bend the curve of economic history in the right direction.

RealEx DAO Social Channels

[RealEx DAO Discord](#)

[RealEx DAO Instagram](#)

[www.realex.io](#)

[RealEx DAO Telegram](#)

[RealEx DAO YouTube](#)

[www.realex.foundation](#)

[RealEx DAO Twitter](#)

[RealEx DAO Reddit](#)

IX. GLOSSARY

We have provided a glossary of terms used throughout this whitepaper and commonly used in DeFi. Many of these definitions have been provided by summary available on the Consensys website. New terms and processes are being invented almost daily in the DeFi space. In subsequent editions of this whitepaper, the DAO will update terminology.

Account

A public and private keypair that “holds” your funds.

Your funds are actually stored on the blockchain, not in the wallet or account. Just like your Reddit account has a username (public) and password (private), so does your Ethereum account—the difference being that you are the custodian of your Ethereum keys, while Reddit holds your login information for their site. For additional security, you can use a password to encrypt your private key which would result in a username (public) and password (private) and password for that password (private + more secure).

Address / Public Key

Used to send and receive transactions on a blockchain network. An address is an alphanumeric character string, which can also be represented as a scannable QR code. In Ethereum, the address begins with 0x. For example:
0x06A85356DCb5b307096726FB86A78c59D38e08ee

Airdrop

A token distribution method used to send cryptocurrency or tokens to wallet addresses. Sometimes airdrops are used for marketing purposes in exchange for simple tasks like reshares, referrals, or app downloads.

Altcoin

Any digital currency alternative to Bitcoin. Many altcoins are forks of Bitcoin with minor changes (e.g., Litecoin). See also ‘fork’.

AML (Anti-Money Laundering)

A set of international laws enacted to diminish the potential for criminal organizations or individuals to launder money. These rules and laws are applied to cryptocurrencies with varying effects in different jurisdictions.

API (Application Programming Interface)

A software intermediary that allows two separate applications to communicate with each other.

Attestation

Under the Proof of Stake mechanism (on the Beacon Chain), every validator other than the one proposing a new block will provide an attestation, or vote, in favor of a block with which it agrees, hereby forming consensus and confirming the block and the transactions it contains. See also “Proof of Stake”.

Bitcoin / Bitcoin (BTC)

The first cryptocurrency based on a Proof of Work (PoW) blockchain. Bitcoin was created in 2009 by Satoshi Nakamoto — a pseudonym for an individual whose real identity is unknown — and the concept of cryptocurrency was outlined in a white paper titled “Bitcoin: A Peer-to-Peer Electronic Cash System.” Use “Bitcoin” for the blockchain/network; “bitcoin” for the cryptocurrency. The plural of bitcoin is just bitcoin; the abbreviation is BTC, with a space: I have 250 BTC.

Block

Think of a blockchain as consisting of a ledger that is being constantly updated, and those changes synced between any number of different nodes (indeed, “distributed ledger technology” is another phrase used to describe it). After a certain number of transactions have been added to the ledger and consensus has been reached among the nodes that the transactions are valid, then they are cryptographically locked into a “block” and officially recorded. This “block” forms the basis for the next one; in this way, they are all linked together in a chain, hence—blockchain.

Block Height

The number of blocks connected together in the blockchain. For example, Height 0 would be the very first block, which is also called the Genesis Block.

Block Reward

The reward given to a miner after it has successfully hashed a transaction block. Block rewards can be a mixture of coins and transaction fees. The composition depends on the policy used by the cryptocurrency in question, and whether all of the coins have already been successfully mined. The current block reward for the Bitcoin network is 12.5 bitcoins per block.

Block Time

When we talk about ‘block time’, we’re referring to how long it takes for a block of transactions (see ‘block’) to be confirmed by the network, either by miners under PoW or by validators under PoS. See also ‘Proof of Work’, ‘Proof of Stake’.

Blockchain

A digital ledger comprised of unchangeable, digitally recorded data in packages called blocks. Each block is ‘chained’ to the next block using a cryptographic signature. Ethereum is a public blockchain, open to the world; its digital ledger is distributed, or synced, between many nodes; these nodes arrive at consensus regarding whether a transaction is valid before encrypting a number of transactions

Coin

A coin, in cryptocurrency, is a representation of digital asset value that is generated via its own independent blockchain.

Cold Wallet

An offline wallet that is never connected to the internet. These wallets protect cryptocurrencies from getting hacked online.

Confirmation

A confirmation happens when the network has verified the blockchain transaction. Under a Proof of Work (PoW) consensus mechanism, this happens through a process known as mining; under Proof of Stake (PoS), the process is known as validation. Once a transaction is successfully confirmed it theoretically cannot be reversed or double spent. The more confirmations a transaction has, the harder it becomes to perform a double spend attack.

Consensus

The process used by a group of peers, or nodes, on a blockchain network to agree on the validity of transactions submitted to the network. Dominant consensus mechanisms are Proof of Work (PoW) and Proof of Stake (PoS).

Crypto

Even though this prefix is originally Greek, our current usage comes from cryptography. Technologies that are referred to with the blanket term of “crypto” tech are underlain by cryptographic tools and processes (such as public/private key pairs) that enable them, and enable them to be secure. Of course, “cryptocurrency” often gets shortened to simply “crypto”, so this emerging field is full of instances where something “crypto” is being added ~~to~~ or shortened.

Cryptoassets

A useful blanket term that covers on-chain assets: cryptocurrencies, NFTs, and other, still emerging, products.

Cryptocurrency

Digital currency that is based on mathematics and uses encryption techniques to regulate the creation of units of currency as well as verifying the transfer of funds. Cryptocurrencies operate independently of a central bank, and are kept track of through distributed ledger technology.

Cryptography

A method for secure communication using code. Symmetric-key cryptography is used by various blockchain networks for transfer of cryptocurrencies. Blockchain addresses generated for wallets are paired with private keys that allow transfer of cryptocurrency. Paired public and private keys allow funds to be unlocked.

DAO

A Digital Decentralized Autonomous Organization (DAO, pronounced like the Chinese concept) is a powerful and very flexible organizational structure built on a blockchain. Alternatively, the first known example of a DAO is referred to as “The DAO”. The DAO served as a form of investor-directed venture capital fund, which sought to provide enterprises with new decentralized business models.

Decentralization

The transfer of authority and responsibility from a centralized organization, government, or party to a distributed network.

Decentralized Application (dapp)

An open source, software application with backend code running on a decentralized peer-to-peer network rather than a centralized server. You may see alternate spellings: dApps, DApps, Dapps, and Ðapps.

Decentralized Exchange (DEX)

A decentralized exchange is a platform for exchanging cryptocurrencies based on functionality programmed on the blockchain (i.e., in smart contracts). The trading is peer-to-peer, or between pools of liquidity. This is in contrast with a centralized exchange, which is more akin to a bank or investment firm that specializes in cryptocurrencies. There are important technical and regulatory differences between the two which are constantly evolving.

Digital Asset

A digital commodity that is scarce, electronically transferable, and intangible with a market value.

Digital Identity

An online or networked identity adopted by an individual, organization, or electronic device.

Distributed Ledger

A type of database which spreads across multiple sites, countries, or institutions. Records are stored sequentially in a continuous ledger. Distributed ledger data can be either “permissioned” or “unpermissioned” to control who can view it.

Encryption

There are many types of encryption, but for our purposes, it is a process that combines the text to be encrypted (plaintext) with a shorter string of data referred to as “a key” in order to produce an output (ciphertext). This output can be “decrypted” back into the original plaintext by someone else who has the key.

Entropy

In the context of cryptography, ‘entropy’ refers to ‘randomness’; generally, the more random something is (the more entropy it has), the more secure it is.

ERC-20 Token Standard

ERC is the abbreviation for Ethereum Request for Comment and is followed by the assignment number of the standard. ERC-20 is a technical standard for smart contracts which is used to issue the majority of tokens (in particular, cryptocurrency tokens) extant on Ethereum. This list of rules states the requirements that a token must fulfill to be compliant and function within the Ethereum network.

ERC-721 Token Standard

As stated above, this is another standard for Ethereum smart contracts, which allows for the issuance of a non-fungible token, also known as an NFT. This token standard is used to represent a unique digital asset that is not interchangeable.

Ether (ETH)

Ether is the native currency of the Ethereum blockchain network. Ether—also referred to as ETH (pronounced with a long “e”, like “teeth” without the “t”)—functions as a fuel of the Ethereum ecosystem by acting as a medium of incentive and form of payment for network participants to execute essential operations. The cryptocurrency of Ethereum has a lowercase e. The plural of ether is just ether; its abbreviation is ETH, with a space: I have 10 ETH.

Ethereum

A public blockchain network and decentralized software platform upon which developers build and run applications. As it is a proper noun, it should always be capitalized.

Exchange

A place to trade cryptocurrency. Centralized exchanges, operated by companies like Coinbase and Gemini, function as intermediaries, while decentralized exchanges do not have a central authority.

Fiat Currency

Government-issued currency. For example, US Dollars (USD), Euros (EUR), Yuan (CNY),

Fork

A fork creates an alternative version of a blockchain, and is often enacted intentionally to apply upgrades to a network. Soft Forks render two chains with some compatibility, while Hard Forks create a new version of the chain that must be adopted to continue participation. In the instance of a contentious Hard Fork, this can create two versions of a blockchain network. See also “hard fork”.

Gas

A measure of the computational steps required for a transaction on the Ethereum network. This then equates to a fee for network users paid in small units of ETH specified as Gwei. See also “ether (denominations)”. For more on gas, see MetaMask’s user guide [here](#).

Gas Price

The gas price is what it sounds like: the cost the network is paid for the computational work being performed in a given transaction. It is paid in units of ETH called Gwei. Depending on network congestion, the gas price may vary significantly.

Halving

Many cryptocurrencies have a finite supply, which makes them a scarce digital commodity. For example, the total amount of Bitcoin that will ever be issued is 21 million. The number of bitcoins generated per block decreases 50% every four years. This is called “halving.” The final halving will take place in the year 2140.

Hard Fork

A hard fork occurs when there is a change in the blockchain that is not backward compatible (not compatible with older versions), thus requiring all participants to upgrade to the new version in order to be able to continue participating on the network

Immutability

The inability to be altered or changed. This is a key element of blockchain networks: once written onto a blockchain ledger, data cannot be altered. This immutability provides the basis for commerce and trade to take place on blockchain networks.

ICO

An Initial Coin Offering (also called ICO) occurs when a new cryptocurrency sells advance tokens in exchange for upfront capital. These have been a vehicle for fraud

Know Your Customer (KYC)

A process in which a business must verify the identity and background information (address, financials, etc) of their customers. For example, current regulations and laws require banks and other financial institutions to keep and report customers’ personal information and transactions.

Layer 2

Layer 2 is a set of upcoming scaling solutions for Ethereum. For the authoritative description, see [here](#).

Light Client

A client that downloads only a small part of the blockchain, allowing users of low-power or low-storage hardware like smartphones and laptops to maintain almost the same guarantee of security by sometimes selectively downloading small parts of the state.

Liquidity

The availability of liquid assets to a company or market. An asset is considered more liquid if it can easily be converted into cash. The harder the ability to turn an asset into cash the more illiquid the asset. For example, stocks are considered relatively liquid assets as they can be easily converted to cash while real estate is considered an illiquid asset. The liquidity of an asset affects its risk potential and market price.

Mainnet

The primary network where actual transactions take place on a specific distributed ledger. For example, The Ethereum mainnet is the public blockchain where network validation and transactions take place.

Market Cap

Short for Market Capitalization, this term refers to the total value held in a particular industry, market, company, or asset. For a publicly traded company, the market cap is the total dollar market value of a company's outstanding shares. For Bitcoin or Ethereum, the total market cap is a reflection of the current existing supply times the market price.

MetaMask

MetaMask, either in its mobile app form on iOS and Android, or in its browser extension form, is a tool to access and interact with blockchains and the decentralized web. Its functions include that of a wallet, a dapp permissions manager, and token swap platform.

Mining

The process by which blocks or transactions are verified and added to a blockchain using a Proof of Work (PoW) consensus mechanism. In order to verify a block a miner must use a computer to solve a cryptographic problem. Once the computer has solved the problem, the block is considered "mined" or verified. In the Bitcoin or Ethereum PoW blockchains, the first computer to mine or verify the block receives bitcoin or ether as a reward.

Node (full node)

Any computer connected to the blockchain network is referred to as a node. A full node is a computer that can fully validate transactions and download the entire data of a specific blockchain. In contrast, a "lightweight" or "light" node does not download all pieces of a blockchain's data and uses a different validation process.

NFT

When discussing Non-Fungible Tokens (NFTs), “fungibility” refers to an object’s ability to be exchanged for another. For example, an individual dollar is considered fungible as we can trade dollars with one another. Artwork is usually deemed non-fungible as paintings, sculptures, or masterpieces are likely to be unequal in quality or value. A non-fungible token is a type of token that is a unique digital asset and has no equal token. This is in contrast to cryptocurrencies like ether that are fungible in nature.

Oracle

Typically, an oracle is any entity or person that is relied on to report the outcome of an event. In a blockchain network an oracle (human or machine) helps communicate data to a smart contract which can then be used to verify an event or specific outcome.

P2P (Peer-to-peer)

P2P refers to interactions that happen between two parties, usually two separate individuals. A P2P network can be any number of individuals. In regards to a blockchain network, individuals are able to transact or interact with each other without relying on an intermediary or single point of failure.

Permissioned Ledger

A blockchain network in which access to ledger or network requires permission from an individual or group of individuals, as opposed to a public blockchain. Permissioned ledgers may have one or many owners. Consensus on a permissioned ledger is conducted by the trusted actors, such as government departments, banks, or other known entities. Permissioned blockchains or ledgers contain highly-verifiable data sets because the consensus process creates a digital signature, which can be seen by all parties. A permissioned ledger is much easier to maintain and considerably faster than a public blockchain. For example, Quorum or Hyperledger Besu are permissioned ledgers that can be more easily set up for large enterprises. In contrast, the public Ethereum blockchain is a permissionless ledger which anyone can access.

Private Blockchain

A blockchain or distributed ledger that has a closed network where participants are controlled by a single entity. A private blockchain requires a verification process for new participants. A private blockchain may also limit which individuals are able to participate in consensus of the blockchain network. See also ‘permissioned ledger’.

Private Key

A private key is an alphanumeric string of data that, in MetaMask, corresponds to a single specific account in a wallet. Private keys can be thought of as a password that enables an individual to access their crypto account.

Proof of Authority (PoA)

A consensus mechanism used in private blockchains, granting a single private key the authority to generate all of the blocks or validate transactions.

Proof of Stake (PoS)

A consensus mechanism in which an individual or “validator” validates transactions or blocks. Validators “stake” their cryptocurrency, such as ether, on whichever transactions they choose to validate. If the individual validates a block (group of transactions) correctly then the individual receives a reward.

Typically, if a validator verifies an incorrect transaction then they lose the cryptocurrency that they staked. PoS requires a negligible amount of computing power compared to Proof of Work consensus.

Proof of Work (PoW)

A consensus mechanism in which each block is ‘mined’ by a group of individuals or nodes on the network. Hashing a block, which is in itself an easy computational process, under PoW requires each miner to solve for a set, difficult variable. In effect, the process of hashing each block becomes a competition. This addition of solving for a target increases the difficulty of successfully hashing each block. For each hashed block, the overall process of hashing will have taken some time and computational effort. Thus, a hashed block is considered Proof of Work, and the miner that successfully hashes the block first receives a reward, in the form of cryptocurrency. PoW is significantly more energy-intensive than other consensus mechanisms, such as Proof of Stake.

Protocol

A set of rules that dictate how data is exchanged and transmitted. This pertains to cryptocurrency in blockchain when referring to the formal rules that outline how these actions are performed across a specific network.

Public Blockchain

A globally open network where anyone can participate in transactions, execute the consensus protocol to help determine which blocks get added to the chain, and maintain the shared ledger.

Public Key

In cryptography, you have a keypair: the public and private key. You can derive a public key from a private key, but cannot derive a private key from a public key. The public key, therefore, is obtained and used by anyone to encrypt messages before they are sent to a known recipient with a matching private key for decryption. By pairing a public key with a private key, transactions not dependent on trusting involved parties or intermediaries. The public key encrypts a message into an unreadable format and the corresponding private key makes it readable again for the intended party, and the intended party only.

Rug Pull

Similar to the traditional financial scam of a pyramid scheme, a 'rug pull' is a cryptocurrency or crypto-token based scam in which the creators of the token create hype, through injecting liquidity into their token, airdropping, and other schemes, and once investors pile in and boost the price of the token up to a certain point, the creators liquidate their share of the tokens, leaving their investors with next to nothing.

Satoshi Nakamoto

A pseudonymous individual or entity who created the Bitcoin protocol, solving the digital currency issue of the "double spend." Nakamoto first published their white paper describing the project in 2008 and the first Bitcoin software was released one year later.

Scalability

A change in size or scale to handle a network's demands. This word is used to refer to a blockchain project's ability to handle network traffic, future growth, and capacity in its intended application.

Seed (phrase) / Secret Recovery Phrase

The seed phrase, mnemonic, or Secret Recovery Phrase is a crucial part of public blockchain technology, originally created for Bitcoin, and goes by many names. However, they all refer to a set of ordered words which correspond to determined values. These values never change, and therefore the same string of words in the same order will always produce the same number—this is the underlying functionality that allows seed phrases to back up wallets. The Secret Recovery Phrase is exactly what it sounds like: something that is secret, and should be known only to the owner of the account. If the seed phrase is given to someone else, that person has complete control over the account; they can drain it of tokens and funds, execute transactions with it, etc.

Smart Contracts

Smart contracts are programs whose terms are recorded in computer code. While they often contain agreements or sets of actions between parties that emulate a traditional legal contract, they are not, in and of themselves, legal documents. Smart contracts are automated actions that can be coded and executed once a set of conditions is met, and are the dominant form of programming on the Ethereum Virtual Machine.

Stablecoin

Any cryptocurrency pegged to a monetary asset, typically a fiat currency the US dollar. It theoretically remains stable in price as it is measured against a known amount of an asset less subject to pricing volatility.

Steadycoin

A steadycoin is a cryptocurrency backed by inflation-resistant hard assets (not fiat currency), offers the potential of yield to the owners, and provides a medium of exchange. The first steadycoin is generally attributed to the RealEx DAO.

Staking

In the Ethereum context, ‘staking’ of tokens or currency carries the traditional meaning of ‘setting aside currency for a determined purpose’; however, ‘staking’ can happen in a variety of venues with different effects. For example, on decentralized exchanges (DEXes), there is no centralized authority or bank putting up the funds to allow transfers to happen between parties; rather, the parties amongst themselves have to establish liquidity pools in order to facilitate swaps. In this context, someone might ‘stake’ tokens into a liquidity pool, often for a promised rate of return in exchange for the use of their tokens, with the option to withdraw their tokens later.

Token

A token represents an asset built on an existing blockchain. There are many types; see also ‘ERC-20’ and ‘ERC-721’ entries.

Transaction Block

A collection of transactions on a blockchain network, gathered into a set or a block that can then be hashed and added to the blockchain.

Trustless

‘Trustless’ is a term that gets used a lot in the decentralized web, and it deserves some explanation. Traditionally, to call something ‘trustless’ would sound like a negative thing. In the context of decentralized technology, it has a more technical meaning: since everyone has a copy of the ledger of all transactions ever executed, there is no need for a third-party repository of ‘truth’ in whom trust resides. We don’t rely on some centralized server somewhere that could be hacked or changed arbitrarily; anyone can verify the transactions themselves. In a way, the rules and assurances built into the blockchain provide the basis for greater trust, because the system works the same for everyone

Wallet

A designated storage location for digital assets (cryptocurrency) that has an address for sending and receiving funds. The wallet can be online, offline, or on a physical device.

Web3 / Web 3.0

Web3, or Web 3.0, are terms used synonymously with “the decentralized web” and are often used to refer, broadly, to the blockchain and decentralized technology ecosystems as a whole.

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