September 10, 2024

Litepaper Version 1.03

Table of Contents

Introduction

There are 144 million homes in the United States alone, with residential real estate values globally totaling over $168.5 trillion. Property ownership is a fundamental aspect of personal freedom, enabling individuals to build long-term wealth. However, the current centralized system of property titles is outdated and inefficient.

Imagine a world where properties could be exchanged from one digital wallet to another within seconds, made possible by blockchain technology. Enter PropyKeys, a gamified social layer platform that pushes the boundaries of property rights onchain.

The journey begins with Minters, crypto-native actors, and Owners, those who own real estate in the physical world. PropyKeys aligns incentives, transforming individual pursuits into a collective effort to record all titles on the blockchain.

Minters, initially minting addresses for others, become guardians paving the way for onchain ownership. Their efforts not only earn rewards for safeguarding addresses but also for facilitating their transfer to the rightful Owners. Conversely, Owners participate to reinforce their real-world ownership. If a Minter has already recorded their address, Owners can claim it, verifying their status to gain instant benefits of onchain title ownership.

This dynamic interplay of web3-enabled incentives is complemented by a staking mechanism, rewarding both groups of the new onchain real-estate economy. The PropyKeys gameloop unfolds, intertwining the roles of Minters and Owners into a crypto-native narrative that will reshape property rights globally.

Decentralized Property Ownership Paradigm

At its core, the new dApp release from PropyKeys is driven by a vision that goes beyond simple property transactions.

Envision a world where every property's rightful ownership is securely stored in an unchangeable onchain title. Picture a future where individuals can easily engage in peer-to-peer property transactions or use their property assets for micro mortgages on a global scale.

Envision communities building collaborative relationships among all stakeholders—homeowners, renters, landlords, agents, municipal authorities, and utility providers. PropyKeys will enable efficient problem-solving mechanisms, empowered decision-making for owners, buyers, sellers and renters, streamlined property management processes, heightened community engagement, data-informed decision-making, and a commitment to sustainable practices. Transparent relationships not only improve individual property experiences but also strengthen communities, leading to a future where integrity and cooperation drive positive change in the real estate industry.

This future, supported by blockchain's trustless framework, reshapes property rights autonomy and societal norms. It's time to redesign the economic model of the real estate industry, involving all stakeholders: homeowners, renters, and agents, to establish a fair model for everyone.

A Visionary Shift in Property Rights

This initiative represents a philosophical shift from centralized control of property records to decentralized autonomy. It signals an era where property rights are encoded in a distributed ledger, governed not by intermediaries but by algorithms. PropyKeys's dApp release marks a departure from traditional property ownership

models, moving towards decentralized, immutable, and transparent property rights.

Empowering Individuals Globally

Economically, the implications of this shift are far-reaching. Decentralized property ownership as a RWA paradigm enables access to more secure property ownership. Furthermore, the facilitation of micro mortgages based on blockchain-secured assets extends financial opportunities to those previously excluded from traditional banking systems.

PropyKeys

Home Addresses Market and Tokenomics

Enter PropyKeys - a new onchain market of home addresses. A global onchain home registry. Addresses can be minted for a 2.5 PRO token fee (ERC-20, Ethereum Mainnet and Base Layer 2 Network). In the initial phase, PropyKeys community members are encouraged to mint home addresses. Each address is unique and can only be held by one player at a time. Ecosystem participants are split into 2 types of communities, Minters and Owners. With four types of NFTs available, participants can engage in various aspects of property ownership and management, ensuring a comprehensive and inclusive ecosystem.

Types of PropyKeys NFTs

The following are PropyKeys NFTs, each playing a distinct role in the ecosystem:

1. Tier 1 NFTs - Home Addresses and Landmarks:

a. Represents any home address or landmark as an NFT.
b. Offers 1x Staking Power.
c. Requires 2.5 PRO tokens for minting.
d. Earns 50 PRO rewards if a real owner claims your NFT.
e. Receives $1,000 in PRO if a real owner creates an RWA (Real World Asset) and sells it .

2. Tier 2 NFTs - Deed NFT:
    a. Represents a deed minted onchain (Encrypted, US Only).
    b. Provides 10x Staking Power.
    c. Requires 50 PRO tokens for minting.
    d. Secures property ownership from deed fraud and county hacks by storing deed onchain encrypted on IPFS.
3. Tier 3 NFTs - Real World Asset (RWA) NFT:
    a. Makes a home a real-world asset (RWA NFT) (US Only).
    b. Offers 200x Staking Power.
    c. Requires 2,000 PRO tokens for minting.
    d. Embraces the future by making homes DeFi ready - will allow using RWA NFTs as an onchain collateral (coming soon).
4. OG NFTs:
    a. Unique tokens awarded to Tier 1 minters when an address is claimed by its owner, offering 5x staking power in the staking protocol and a $1,000 referral fee if the property is sold as a Real World Asset NFT on the marketplace.

The Relationship between Minters & Owners

Minters

PropyKeys is bringing real-world addresses and real estate data onchain globally. Minters, essential to our community, assist Owners in achieving onchain ownership. They spread information among NFT collectors and real estate owner communities to create a network effect.

Minters are incentivized to mint addresses and educate their community in several ways:

1. Staking/Rent Rewards:
    A. Staking/rent rewards vary based on the tier of the NFT:
        a. Tier 1 NFTs (Minted Address): 1x staking power (the staker should have at least 10 PropyKeys NFTs owned).
        b. Tier 2 NFTs (Deed Onchain): 10x staking power.
        c. Tier 3 (RWA) NFTs: 200x staking power.
    B. OG NFTs: 5x staking power.
2. Address Minting and Education Rewards:
    A. Example: Minter A mints 10 addresses for 20 PRO each. PropyKeys compensates Minter A with 50 PRO tokens for bringing homeowners to mint Tier 2 NFTs (Deed Onchain) from the address owned by minter. Minter's profit: 250 PRO tokens.
2. Upgrade Rewards to RWA NFT by Owner:
    A. When owners upgrade addresses to RWA NFTs and sell it on a Propy marketplace, the original minter receives a reward of 1,000 USDC for each upgrade completed.
    B. Example: If Minter A upgrades 5 addresses to RWA NFTs and owners sell it on a Propy marketplace, PropyKeys compensates Minter A with 1,000 USDC for each upgrade, resulting in a total profit of 5,000 USD
3. Earn PRO Tokens and other incentives through Contests & Drops:
    A. Participation in contests, drops and other activities provides opportunities to earn PRO tokens and other incentives.

Owners

As mentioned earlier, PropyKeys centers around the concept of a decentralized property ownership system, envisioning a future where individuals can effortlessly engage in peer-to-peer property transactions. Minters and Owners are key roles within this system. Owners are individuals who can prove ownership of an address and gain access to benefits by registering it with Propy.

In the second phase of PropyKeys, Owners are incentivized to record their Deed Onchain and upgrade their home to a RWA NFT.

Owners are incentivized to upgrade their Deed Onchain (Tier 2) through staking rewards:
Example: Owner A receives address from Minter A. For 50 PRO tokens, Owner A upgrades their deed onchain. This unlocks staking feature with 10x power for their address.

When Owner A is ready to sell their home they can upgrade to a RWA NFT for 2,000 PRO Tokens. Peer-to-peer real estate transactions can now take place.

Having the deed onchain not only serves as a legal way of ownership proof but also provides a crucial layer of defense against fraud. By recording ownership securely on the blockchain, it creates an immutable record that cannot be altered or tampered with easily. This transparency and security significantly reduce the risk of fraudulent activities, ensuring that ownership rights are protected and upheld reliably.

- Other benefits Owners receive by upgrading their property to a RWA NFT (Tier 3):

a. Ability to sell their property through NFT auctions
b. Faster sales process
c. Closing process is easier and less expensive than traditional norms
d. Become part of a movement to create a global decentralized home registry

If an address is already minted, the owner can claim it and receive a deed NFT directly. The minter receives 50 PRO tokens and an OG NFT. The OG NFT provides five times the staking power in the protocol. Additionally, the original NFT mentor will receive a $1,000 referral fee if the property owner ever sells their asset as a Real World Asset NFT on the marketplace.

So, by offering balanced incentives in this evolving economy of addresses, we encourage innovation and ensure the widespread minting of home addresses onchain. It's clear that eventually, global assets like stocks, commodities, and real estate will move onto the blockchain. This shift disrupts the current norms and leads us into the new era of the Web3 world.

$PRO Token as Ecosystem Backbone

The $PRO token (ERC-20) is integral to Propy's ecosystem, ensuring secure transactions and encouraging participation. It goes beyond being just a means of exchange; it drives the achievement of decentralized property ownership. Serving as the native ERC20 token, $PRO supports transactions such as minting onchain property titles, facilitating property transfers, and verifying ownership authenticity.

Maintaining the value of the $PRO token requires striking a balance between scarcity and utility. The limited token supply (100 million) ensures scarcity, while its utility drives demand. Beyond transactions, the token serves various functions such as staking, and incentivizing active participation in the ecosystem.

Staking/Rent Pool

Ten to twenty percent of the monthly minting revenue from the Staking/Rent Pool will be distributed as staking rewards and incentives/benefits to participants in the ecosystem. Rewards are distributed monthly.

For example:

From July 13th to Aug 12th – 141 addresses were minted and upgraded, totaling 352.50 in PRO revenue. The protocol will distribute to the community 10%-20% in rewards from the 352.50 PRO revenue. Monthly distributions are rewarded on the 13th of every month.

Periodically, 10% of minting revenue will be allocated to PropyKeys to fund protocol expenses, development and advancement.

The comprehensive audit report by ChainSafe Systems for the staking contract is accessible via the link.

1. Tier 1 NFT: 2.5 PRO tokens
    a. Staking Pool receives 100% of the fee
2. Upgrade to Tier 2: 50 PRO tokens
    a. Validators receive 90% of the fee
    b. Staking Pool receives 10% of the fee
3. Upgrade to Tier 3: 2,000 PRO tokens
    a. Validators receive 90% of the fee
    b. Staking Pool receives 10% of the fee
4. Tier 3 RWA NFT Transfers:
    a. Transfer between wallets
    b. Royalty fee of 1,000 USDC
    c. Royalty distributed to initial address owner
    d. Further calibration through community proposals and voting.

Staking/Rent Rewards

Address NFTs could be staked, the rewards will be distributed from the Staking Pool as follows: 1x staking power for Tier 1; 10x staking power for Tier 2; and 200x staking power for Tier 3.

Providing staking rewards will incentivize community members to hold onto their NFT's and help build a strong and committed community.

The staking contract uses "staking points" to determine how much to reward each user with.

Each staked NFT has a certain amount of "weight" associated with it, these are the different "weights" associated with each type of NFT that can be staked:

Tier 1 PropyKey: 1 weight (minimum 10 NFTs need to be staked for Tier 1)
Tier 2 PropyKey: 10 weight

Tier 3 PropyKey: 200 weight
PropyOG: 5 weight

When staking Tier 1 NFTs, it's necessary for the user to own a minimum of 10 PropyKeys NFTs of any type. Additionally, each staked NFT requires a corresponding deposit of PRO. The weight of each NFT is measured in PRO, with 1 weight equaling 1 PRO. For instance, staking 3 Tier 1 PropyKeys entails depositing 3 PRO alongside the NFTs. Similarly, staking a Tier 3 PropyKey requires depositing 200 PRO along with the Tier 3 PropyKey.

In summary, the weights are relative to the weight of a Tier 1 NFT, which is 1 PRO. This means that staking 1 PropyOG token is equivalent to staking 5 Tier 1 PropyKeys, while staking 1 Tier 3 PropyKey is akin to staking 200 Tier 1 PropyKeys. The weight assigned to each stakable NFT determines the amount of PRO required to be deposited with each NFT.

The number of "staking points" earned per staked NFT isn't fixed. Therefore, although staking 1 Tier 2 PropyKey yields the same number of staking points as staking 10 Tier 1 PropyKeys, the actual number of staking points generated depends on the PRO present in the staking contract. As PRO enters the staking contract as rewards, the number of staking points minted against each NFT's weight decreases accordingly.

We follow this formula to determine how many staking points are minted:

STAKING_POINTS_MINTED = WEIGHT * (TOTAL_MINTED_STAKING_POINTS / TOTAL_BALANCE_OF_PRO);

We can see from the formula above that as long as the amount of staking points minted & the balance of PRO in the contract are equal, the amount of staking points minted against "weight" is equal (i.e. 1 weight mints 1 staking point, 5 weight mints 5 staking points), however, once the amount of PRO in the staking contract exceeds the amount of minted staking points (e.g. by a reward allocation being delivered to the staking contract), then we start to see deviation away from the concept that 1 weight = 1 staking point.

Example:

Let's break down how staking works with Jane and Joe:

1. Jane's Staking:
    a. Jane is the first to stake.
    b. She has 10 Tier 1 NFTs and stakes all 10.
    c. Jane receives 10 "staking points."
2. Joe's Staking:
    a. Joe stakes 3 PropyOG tokens.
    b. Since each PropyOG token being staked is worth 10, Joe receives 15 "staking points."

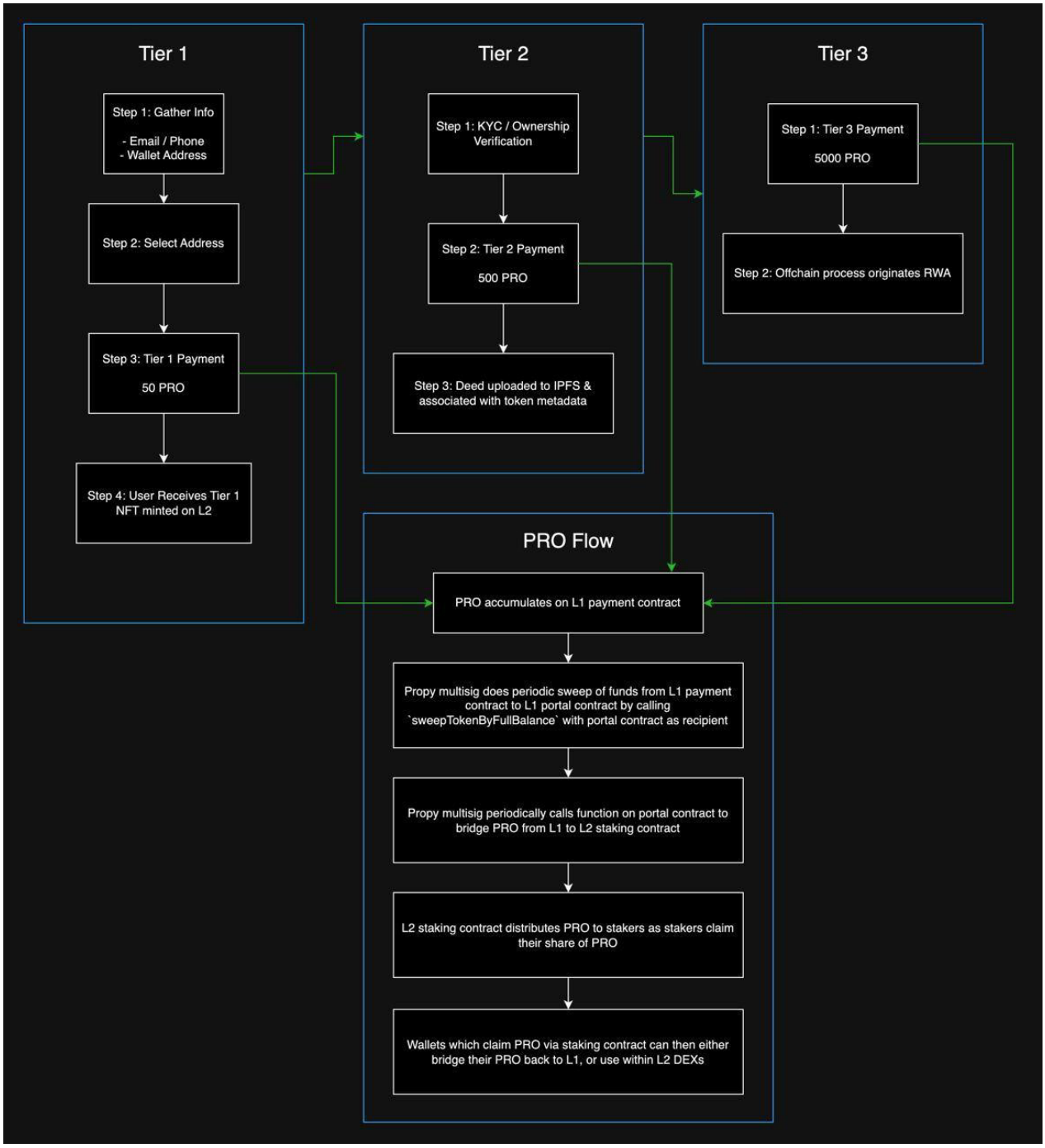
In this scenario:

- Joe has three times more staking points than Jane.
- Joe possesses 60% of the staking points, and Jane holds 40%.

If any PRO is sent to the staking contract (outside of users entering the staking contract), these will be considered rewards and will be distributed to stakers when they "unstake".

If 100 PRO is sent to the staking contract in our above scenario (after both Jane and Joe staked), then Jane would receive 15 PRO and Joe would receive 75 PRO, upon each user unstaking.

Fee Collection and Incentive Mechanisms



The tokenomics strategy involves collecting $PRO fees for minting on-chain addresses and property titles. These fees not only support ecosystem expenses and development but also encourage community involvement. All fees collected

from addresses are used to reward address owners, promoting engagement and network expansion. Token holders can also contribute and influence the ecosystem through mechanisms like staking and governance participation, earning rewards in $PRO tokens along the way.

Additionally, in the future, the community will be incentivized to provide loans for collateralized RWA NFTs via a secure protocol, developed by the Propy ecosystem of partners.

Proof of Habitat

If an address holder can prove that they live at the obtained address they will get a 0.1% royalty fee when the property changes hands. This way renters are incentivized to be a part of the movement and will have a skin in the game for the property value creation/maintenance.

Validators (Originators, Certifier)

Upgrades to Tier 2 and Tier 3 will be done by approved validators - licensed real estate professionals, real estate notaries, lawyers, escrow officers, and licensed financial institutions, with 5 years of experience + license. The first validator is Propy Title and Escrow Agency, licensed in the US; once the validator platform is built, the next group will be 3,000 crypto-certified licensed realtors.

Validators will:
Provide data and verified data sources for ownership verification and title search
Tier 3 upgrade - establishing new LLCs, changing title via Propy system at the county, ordering inspections and comparable analysis (see Propy White paper 2 - Real Estate NFTs)

Training Propy AI model on closing documents verification and generation, and receiving awards for that.

All the above tasks are critical compliant and secure property right preservation and thus an experienced group of market experts are required, persons that could be easily identified, accessed penalized, and excluded promptly in case of misuse. Validators or other humans will never execute the critical events such as ownership transfers in this protocol, but rather smart contracts that follow the current law rules.

Real Owners Disputes

Real owners of properties can make a bet to buy their addresses after KYC and verification of their ownership. If the bet is not accepted within 48 hours, the real owner will be able to acquire it at the Unified Community PRO Fee, determined for the entire marketplace by delegated community voting quarterly. The initial owner will receive this fee as per tokenomics, as well as a 1,000 USDC royalty fee in case of a successful sale of this property by the current owner to a new owner.

Our goal is to help homeowners while incentivizing the initial minting community that is creating the global movement.

Quantifying the US Residential Address Market

The United States boasts a vast residential address market, comprising of 160 million residential addresses with an estimated $30 trillion total value and $2 trillion annual volume. This market, steeped in traditional ownership models, remains ripe for disruption and enhancement through the advent of blockchain-backed solutions. These figures underscore the sheer potential and significance of introducing blockchain-backed solutions to enhance and optimize this expansive market. The disruption introduced by PropyKeys's dApp within the US residential

address market extends beyond mere digitization. It envisages a metamorphosis—a transition from archaic paper-based ownership records to secure, immutable, onchain titles. This shift instills trust, transparency, and efficiency within the market, paving the way for a streamlined, decentralized property transaction ecosystem.

Conclusion

PropyKeys's innovation embodies philosophical tenets—trust and transparency. The transition from conventional property registries to blockchain-based onchain titles instills trust in algorithms rather than centralized intermediaries. This philosophical shift reverberates beyond the real estate sphere, transcending into a broader societal paradigm that has started its rapid evolution with programmable decentralized money.

PropyKeys's imminent dApp release signifies the genesis of a decentralized property rights future—an epoch where property ownership is seizure-resistant and verifiable.

PropyKeys's foray into the RWA realm extends beyond technological innovation; it heralds a societal transformation. Decentralized property ownership addresses societal inequities by fostering affordability, accessibility, and inclusivity. The economic empowerment stemming from secure property ownership contributes to a more equitable socio-economic landscape.