TokenSign Whitepaper

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TokenSign introduces Signature Tokens, blockchain's first verifiable NFT autographs.

Signature Tokens™ are new, innovative ERC-1155 semi-fungible tokens that enable anyone to tokenize their signature in a verifiable and secure manner. Signature Tokens may be used (burned) to sign any owned ERC-721 NFT on the Ethereum blockchain, mimicking real-world autographs. Signature Tokens may be traded on any third-party NFT marketplace, providing a profit opportunity for anyone who wants to sell a limited set of their signatures.

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Abstract

TokenSign introduces Signature Tokens™, a new technology that enables non-fungible tokens (NFTs) to be provably signed on the Ethereum blockchain. A Signature Token represents a user's autograph. They may be cryptographically linked to a user's social media accounts to verify a user's identity. Signature Tokens can be used (burned) to sign any ERC-721 NFT on the Ethereum blockchain. In this way, Signature Tokens enable verifiable, secure, authentic, signed collectibles to be created, bought, and sold by anyone on the blockchain.

At their core, Signature Tokens are ERC-1155 semi-fungible tokens that have a special ability to interact and sign ERC-721 non-fungible tokens. TokenSign's smart contract allows the owner of any Ethereum address to complete a one-time minting of their address's Signature Tokens. Upon minting, the user receives a defined supply of their Signature Tokens. As is true for any standard ERC-1155 token, Signature Tokens may be traded on third-party NFT markets, such as OpenSea.io. The entire process enables well known people and notable addresses to monetize their social status, properly incentivizing adoption of this newly created space.

A History of Signatures

Throughout history, many valuable collectibles, including historical paintings, sculptures, and sports memorabilia, have included a hand-written signature from a piece‘s creator or subject. A simple example of modern signed physical collectibles are signed sports memorabilia; a signed Mickey Mantle card was sold for $2.88 million in 2018. Surely the price of that card was not due to it being a piece of paper, but rather due to the fact that it represented a nostalgic piece of history signed by a famous athlete, and that it had a very limited supply.

Users of the Ethereum blockchain invented a new type of collectible in 2017, when CryptoPunks NFTs were minted with a limited supply of 10,000. These non-fungible tokens (NFTs) are currently selling on the Ethereum blockchain for up to over $1 million USD each. CryptoPunks are valuable because they were the first NFTs invented, they have a limited supply, and anyone that owns one can own a part of history, among other reasons.

Not all NFTs are as valuable as CryptoPunks. This is because anyone can mint their own NFTs quite easily. The value of an NFT is determined in a similar manner as any piece of art or real-world collectible; there must be a mixture of scarcity, importance, and beauty to achieve a high price. It is no surprise that a physical item such as a signed baseball card is worth much more than an unsigned baseball card. A signed card has an implied endorsement by the individual who signed it, providing validity to the piece of cardboard with their picture printed on it.

Today, we present a new technology that allows NFTs to be provably signed on the Ethereum blockchain, opening the door for digital signed collectibles to be created and traded by all users in the world, forever.

Signature Tokens

Minting

Signature tokens are ERC-1155 semi-fungible tokens that may be minted a single time by each Ethereum address.

Minting is accomplished by calling the mint() function on the TokenSign smart contract with a single string argument defining the minter's desired name. There are up to six types of Signature Tokens created during a mint() event, and they are distributed as shown in the following table.

Signature Token Type	**Quantity Minted**	**Recipient**
Platinum	3	Minter
Gold	9	Minter
Silver	200	Minter
Ink	1000	Minter
Dev	1	TokenSign Developers
Founder	0-1*	Minter

*Founder token only distributed during the first year of TokenSign on the Ethereum Mainnet

Upon calling mint(), a minter's address will receive all of their allocated Signature Tokens. That address will never be allowed to mint() again. This means that Signature Tokens are a provably scarce digital asset.

TokenSign Developers receive a single Dev token for each address that mints. This incentivizes the developers to maintain the front-end website and continue to innovate.

Trading

Signature Tokens themselves are ERC-1155 semi-fungible tokens that may be traded on third-party markets, such as OpenSea.io.

TokenSign developers collect a 2% fee on all Signature Token trades completed using OpenSea.io. This small fee is intended to incentivize the developers to

maintain the front-end website and continue to innovate. Other third party sites do not have fees on trades at this time. Peer-to-peer transfers can never have fees, per the TokenSign smart contract.

Custom Signatures

Any TokenSign user (including non-minters) may **cryptographically link their custom signature to their Ethereum wallet address** on the TokenSign.app website.

The custom signature will be rendered on all Signature Tokens minted by the user.

Custom signatures allow a minter's signature to be rendered when trading or viewing their Signature Tokens, or when a Signature Token is used to sign an NFT. In the end, a signed basketball card NFT on Ethereum looks a lot like a real-world signed basketball card, but no forgeries will be possible, and the NFT card will last forever!

Social Media Verification

Any TokenSign user is able to **cryptographically link their social media accounts to their Ethereum wallet address** on the TokenSign.app website. The operation is accomplished via a gas-free signed Ethereum message. This innovation allows a user to prove that their Signature Tokens are authentically theirs.

Initially, linked Twitter and Instagram accounts are supported. This may or may not be expanded in the future.

After linking social media accounts, Signature Token images will update automatically to show that the minter is verified and will display the minter's linked account(s).

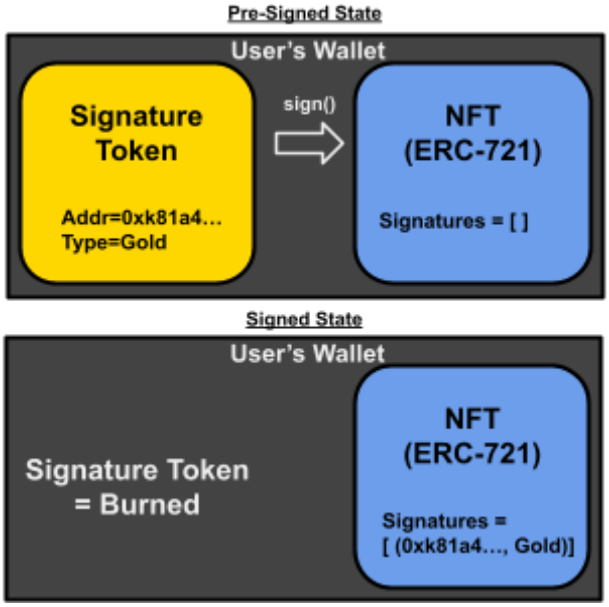
After considering verification, a Signature Token is a provably unique combination of the following items:

- Minter's address
- Verified Twitter and/or Instagram account(s)
- Signature Type (Platinum, Gold, Silver, Ink, Dev, or Founder)

Signing an NFT with a Signature Token

A user who holds a Signature Token may use it to sign any owned ERC-721 NFT. When a Signature Token is used to sign an NFT, the Signature Token is "burned",

forever being eliminated from the blockchain. Signature Tokens are, therefore, provably deflationary assets.



The TokenSign smart contract records all signatures for every signed NFT. Each NFT may only be signed once by a given Signature Token, but it may be signed an unlimited number of different Signature Tokens.

Note that a user must own both the Signature Token and the NFT to be able to perform a Sign event. This ownership requirement prevents any possibility of spam signatures. Sign events are deliberate events that an NFT owner deems to be in their best interest, adding to the signature's importance.

Signed NFTs are rendered with their signatures overlaid using the TokenSign DApp (TokenSign.app). Signature Tokens are also shown alongside the NFT to define exactly which token(s) have signed an NFT.

Example Use-Cases

We have imagined many use-cases for Signature Tokens. A few ideas are listed below.

Influencers and Celebrities

- An influencer and online podcaster releases signed NFT "merch", improving their monetization of being a public figure
- A celebrity mints and sells their Signature Tokens on OpenSea.io, generating instant profit and publicity

Artists

- An Artist mints their own Signature Tokens and holds them as their own to digitally sign their original NFT artwork

    - Signatures may be used to distinguish between "originals" and "prints" of a popular piece of NFT artwork

NFT Creators

- A blockchain-heroes NFT collectible set is released, and well-known blockchain superstar's Silver Signature Token, such as Vitalik Buterin, is used to sign a rare NFT

Corporate

- A limited set of signed NFT tokens representing a partnership between several DeFi companies is released, and the NFTs are signed by each company's CEO

Sports Leagues

- A popular sports league partners with TokenSign to feature a limited set of signed NFT tokens, similar to how signed physical signed collectible sports cards were released in the past

Charity

- A charity auction features NFTs signed by celebrities, public figures, and companies to benefit a worthy cause

Innovation

- An "Ethereum Community NFT" is created by modifying typical ERC-721 behavior, allowing it to be "owned" by everyone, and therefore signed by anyone. The NFT collects thousands of signatures.

Anonymous

- An anonymous, but popular or well-known, Ethereum address mints and sells their Signature Tokens. They remain anonymous, but profit from the sales.

Developer Monetization

TokenSign Signature Token minting and signing are provided free of charge, provably, forever, via the TokenSign smart contract.

Monetization of the TokenSign project will come from the following sources:

- The founders will mint the first Signature Tokens (mint() is called on contract creation), and these first-edition tokens may be very valuable if TokenSign is successful
- Minting tokens results in one extra Dev token being minted to the TokenSign developers
- A 2% fee will be collected on all sales completed on the third-party NFT marketplace website, OpenSea.io
- Advertising partnerships with other companies to feature certain Signature Tokens and/or NFTs on the TokenSign.app website may prove to be valuable

The founders will only be able to monetize their invention if the project is successful. Therefore, they are very motivated to facilitate community growth and

partner with other companies to create a user-friendly product that adds value to the NFT ecosystem and draws a large user-base.

TokenSign.app (DApp)

The TokenSign.app DApp (website) is intended to be the primary way for users to interact with the TokenSign smart contract.

The DApp provides an intuitive interface for anyone who wants to mint, sign, browse, and trade Signature Tokens. It also renders signed NFTs.

Smart Contract

A single smart contract has been deployed by TokenSign to the Ethereum mainnet:

1. TokenSign
    a. Contract Address: 0x7e5E8F46e338BE77756893F4D2Be9Ff1BF99af27
    b. Source Code (verified): https://etherscan.io/address/0x7e5E8F46e338BE77756893F4D2Be9Ff1BF99af27

Roadmap

The following general roadmap is planned for TokenSign. It is subject to change as partnerships or markets evolve.

1. Contract Creation and Deployment
    a. Complete 04/27/2021
2. TokenSign.app alpha release
    a. Estimated 04/28/2021
3. TokenSign.app beta release
    a. Estimated Q2, 2021
4. Seeking of partnerships and advertisements
    a. Estimated Q2, 2021
5. TokenSign.app official release
    a. Estimated Q3, 2021

Disclaimers/Risks

RISKS ASSOCIATED WITH SIGNATURE TOKENS, NFTS, AND ALL SMART CONTRACTS

Note: This list of risks is intended to be informative, not comprehensive

Risk of competition

Risk of insufficient interest in NFTs and/or Signature Tokens

Risk of theft and hacking

Risk of weakness or breakdown in the field of cryptography

Risk of lack of adoption or perceived value of TokenSign as the original signable NFT inventors

Regulatory risk - Governmental agencies passing unanticipated laws restricting blockchain innovation

Unanticipated risks

References

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2. Witek Radomski, Andrew Cooke, Philippe Castonguay, James Therien, Eric Binet, Ronan Sandford, "EIP-1155: ERC-1155 Multi Token Standard," Ethereum Improvement Proposals, no. 1155, June 2018. [Online serial]. Available: https://eips.ethereum.org/EIPS/eip-1155.
3. TokenSign Smart Contract, Ethereum Mainnet: 0x7e5E8F46e338BE77756893F4D2Be9Ff1BF99af27