



T3D

MINT IT. PRINT IT.

NFTY Print Whitepaper

<http://333d.co/>



333D Limited

CONTENTS

3D NFT Printing

Overview	
Who is 333D (T3D)	3
3D-printed NFTs	3
How does T3D enhance the NFT market?	4
What's the the future vision look for T3D?	4

Protocol Architecture

Overview	5
Encryption	6
Cryptography	6
Command Line Package	6
NFTY Print Smart Contract	7
Decentralised Document Storage	7

How to use the protocol

For Collection Creators	7
For End Consumers	8

Smart Contract

List of Collections	8
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333D (T3D) - 3D NFT Printing

Overview

Who is 333D (T3D)?

333D Limited (ABN 24 118 159 881) is an Australian-based 3D printing and technology licensing company that is listed on the Australian Securities Exchange (ASX:T3D). 333D ships its custom-designed 3D-printed collectibles and other 3D-printed licensed merchandise to users all over the world.

333D is an innovator in 3D printing via Blockchain and has developed the “NFTY Print” smart contract that allows you to effortlessly and securely order professionally printed products based on your NFT collections - all done on the Blockchain and paid with cryptocurrency.

Customers can now order 3D printed replicas or choose from an exciting range of merchandise based on any Non-Fungible Tokens (NFT) in their wallet and have it shipped anywhere in the world.

333D is commonly referred to as T3D, going forward in this gitbook this will be used throughout.

More information is available at www.333d.co

3D-printed NFTs

T3D is pleased to announce a new 3D printing service for Blockchain users who would like to hold a figurine or precise 3D replica of their NFTs.

The process works in a straightforward manner: NFT owners can ask for a 3D replica of any of their holdings by connecting to T3D Dapp and querying the service.

The main difference in terms of how users can order their 3D replica relies on whether the NFT has already been minted or whether it is being minted as part of a brand new Collection



How does T3D enhance the NFT market?

T3D creates a complete digital and physical experience. NFT owners are wanting more than just a digital product, they are wanting to interact with their NFT and, with the exciting developments in Augmented Reality (AR), 3D-printing and Near-field Communication (NFC), T3D brings NFTs to life adding another level of customer experience and utility to NFTs.

What's the the future vision look for T3D?

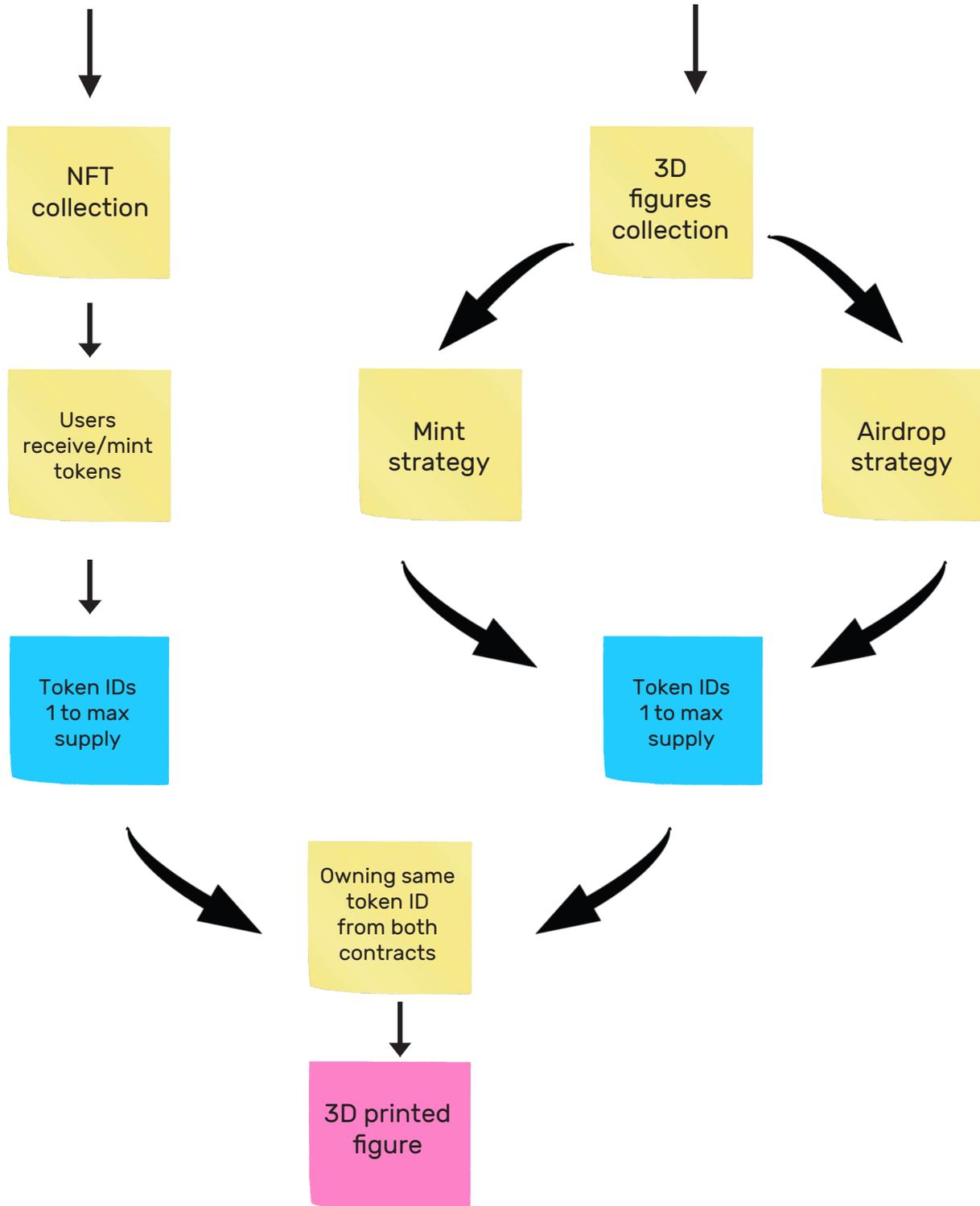
T3D's future is to give NFT creators the tools to add an extra dimension to their offer. Enabling them to blend the digital with the physical with the metaverse.



Protocol Architecture

Overview

The following flow represent how the protocol should be executed as a whole





Initially, the NFT creator deploys his project on his selected network, therefore allowing the public to mint the stream of available token IDs.

When the creator sets in contact with the T3D Team in order to generate the 3D version of his project, he hands in all the required 3D token files, which in turn will be encrypted by the Team.

Once the 3D NFT smart contract is deployed, the creator collection holders will be able to mint the 3D version of their holdings. They may, as well, receive the 3D version of their token holdings if the creator pursues that strategy.

Holding the same token ID from both projects will entitle the owner to claim a 3D printed version of the NFT.

Encryption

Once collection creators engage the NFT collection service provided by T3D, they hand in the artwork and the corresponding STL files to the firm.

In turn, T3D guarantees that these files are stored in a decentralized manner by uploading an encrypted version of each of them on IPFS.

T3D makes use of a brand new npm package, tailor-made for the firm. This guarantees that only T3D will be able to decrypt them at any time in the future. Therefore, the integrity of those files will never be compromised.

Cryptography

At NFTY Print, we utilise AES Encryption to content encrypt the 3D Printing Files. AES is the industrystandard encryption algorithm and is used across many industries.

Once encrypted, only the bearer of the private key set in the T3D CLI config that initially encrypted the file will be able to decrypt the file's content.

Command Line Package

For encryption purposes, T3D has developed its own encryption solution, which is also published as a node package manager tool.

T3D.ts (see: <https://www.npmjs.com/package/t3d-cli>) allows the T3D team to safely encrypt and store all the 3D metadata in a decentralized manner, ensuring that all 3D-printing layouts are only accessed by the Team.



To add an extra layer of security we will ensure that files will be encrypted and decrypted on a remot desktop service only accessabile to a few engineers. The logging is also closed monitored and logged

NFTY Print Smart Contract

Whenever a NFT collection creator reaches out to T3D in order to generate their 3D collection, a new instance of the T3DCreatorCollection smart contract is deployed on the [NETWORK_NAME] network. Whereas the already existing collection points out to the actual artwork, the brand new 3D collection will hold the corresponding 3D metadata required to generate the 3D figure of each token ID.

The collection holders will be able either to mint their 3D version token ID or they will receive their 3D version through an airdrop. The distribution strategy mentioned will be entirely up to the collection creator.

In the upcoming “List of Collections” section, you will be able to consult the contract address and implementation for each of the 3D collections deployed on EVM blockchain networks.

Decentralised Document Storage

We opted to store the content encrypted 3D files on IPFS rather than a centralised server to take advantage of the peer-to-peer nature and not keep data in one place.

Once uploaded, you’ll be provided a hash called CID, which identifies the file’s location. A unique attribute is if you upload new content to that folder, the hash will change, signalling the content of the folder has changed, thus the protocol will know when the folder has been tampered with.

How to use the protocol

For Collection Creators

In order to amplify our scope of work to brand new Blockchain artists, T3D welcomes all collection creators to release their works on our platform.

Creators will be able to partner up with T3D and deploy their collections. Consumers, on the other side of the picture, will be able to mint a selected NFT from that collection, which will entitle them to receiving a 3D figure of the corresponding NFT design.



For End Consumers

Users who own NFTs may ask for the 3D-printed version of their figures.

By connecting to the NFTY Print using their blockchain wallets, the protocol will retrieve their token holdings from a list of popular NFT projects.

If your holdings do not belong to those NFT projects, you should be able to add the one from which you want to retrieve your balance.

Once you have selected the token ID, you should provide a list of personal details to ensure you will receive the 3D figure. We will provide a payment confirmation once we receive the service cost amount.

Smart Contract

List of Collections

To showcase the users of NFTY Print, we'll keep a list of deployed contracts that were used to 3D Print the collection's NFTs



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