



A guide to issuing digital securities on Swarm

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Glossary

Compliance Contract	The configuration of token transfer restrictions defined by a token issuer.
ERC-20	Ethereum Token Standard
ERC-1400	Ethereum Token Standard Proposal for Security Tokens
Governance	The process of decision making undertaken by the community of token holders.
Hash Value	A numeric value of a fixed length that uniquely identifies data.
Investor Qualification	The credentials an investor requires (according to the securities regulations in their jurisdiction) to be able to own and trade a specific security token. Investor qualifications are designated by <i>qualification providers</i> and cryptographically verified by network service providers.
Market Access Protocol	A protocol for compliant security trading using cryptographic proofs.
Qualification Provider	An entity that has been permissioned by a <i>token issuer</i> to collect and process investor personal data and confirm its correctness and authenticity.
Token Contract	A Smart Contract which resides on a blockchain which defines the fundamental properties of a security token.
Token Issuer	An individual or entity that is undertaking the process of converting an asset into a digital security represented by a cryptographic token.
Tokenization	The process of converting an asset into a digital security using blockchain.
Smart Contract	A smart contract is a computer protocol intended to digitally facilitate, verify, or enforce the negotiation or performance of a contract.
SRC-20	Swarm Security Token Standard
SWM	Swarm Fund Token (An ERC-20 compliant token)

List of Abbreviations

AML	Anti-Money Laundering
AuM	Assets under Management
CDD	Customer Due Diligence
GFO	Gas for Fund Operations
IPO	Initial Public Offering
KYC	Know Your Customer
LLC	Limited Liability Company
MAP	Market Access Protocol
NAV	Net Asset Value
ROFR	Right of First Refusal
SPV	Special Purpose Vehicle

Introduction

Swarm

Swarm is an Open Infrastructure For Digital Securities.

The organization itself is non-profit with the aim of promoting, supporting and building the tools for the tokenization of assets on the blockchain. We are building infrastructure to allow for the compliant interaction between token issuers, investors, qualification providers, exchanges and other service providers.

Swarm solves the problem of the lack of liquidity present in traditional asset ownership and investing, allowing for fractional ownership opportunities that are independent of wealth. Individuals that have previously been unable to participate and benefit from exclusive high-yield investment opportunities are now able to.

Swarm supports the creation of token across multiple use-cases, from simple virtual tokens right through to multi-jurisdictional fully regulatory compliant security tokens with investor qualification requirements, fundraising options, transfer restrictions, governance, redemption and other advanced features.

For token issuers, Swarm provides infrastructure that allows the creation of digital securities (tokens) that represent assets for the purpose of co-ownership and co-investment, as well as tools for ensuring that all investments are made in a regulatory compliant manner by investors who are legally permitted (qualified) to participate.

For investors, Swarm is a one-stop shop for self-onboarding as a regulatory compliant investor through Market Access Protocol (MAP) or partners connected to MAP.

Read more about Swarm at <https://swarm.fund> and in our [Medium](#) blog.

SRC20 and Swarm Digital Securities Platform

As a non-profit foundation, Swarm is uniquely positioned to take a supportive role in the development of security tokens in the marketplace, providing an open framework of tools that can be built on and developed further by any stakeholder.

Key to this infrastructure is *SRC20*, a set of properties developed by Swarm that extends Ethereum's fundamental ERC20 token standard to specifically represent **Security Tokens**. Tokens that comply with the SRC20 standard represent fractional ownership in assets, and when interacting with MAP, enforce the regulatory requirements an individual needs to meet in order to be able to own and trade them compliantly.

The Swarm Digital Securities Platform is a free, open-source, client-side interface for the creation and management of SRC20 tokens on any blockchain that supports the standard.

Market Access Protocol

Swarm's Market Access Protocol (MAP) enables the flow of compliant securities transactions to be processed on the blockchain by determining how market access data is stored, read, written and audited in accordance with the SRC20 protocol — the cryptographic standard for security tokens. To compliantly sell, purchase, or transfer securities, a number of conditions, qualifications, and restrictions must effectively coordinate to permit a successful transaction. MAP takes care of compliance so that token issuers can focus on their core function of managing the assets and conveying their investment's value proposition.

Swarm has identified and incorporated the following core principles in order to deliver a profitable and sustainable ecosystem to support security token trading:

Compliance

MAP provides compliance and regulatory proof thereof by ensuring that all requisite parameters are met before a security token transaction can be processed. These parameters often include valid credentials of participants, token restrictions and requirements, geographically based jurisdictions, KYC/AML qualifications, and investor accreditation. Investor qualifications are bound to their wallets ensuring their ability to transact within the rules. Additionally, MAP creates "embedded compliance" through the token configuration process and gives the token issuer control to customize compliance as needed.

Privacy

While MAP can instantly surface whether or not an individual's wallet is compliant with the requirements for any security token transfer, it does not contain investor identifying details connected to each wallet. Investor identity is secure and individuals have control over who can access their data.

Ease of Use

MAP is simple and portable. All parties are able to easily integrate with the framework and satisfy their interests. Market access qualifications are available to the right parties at the right time, anywhere they wish to transact. MAP can be opened to any other token infrastructure to be used as a data ruleset/transfer agent on other blockchains. One of many benefits is to allow token issuers a leaner way to connect to exchanges and to create liquidity around their tokens.

Integrating MAP mitigates significant time and cost inefficiencies otherwise borne by having to develop and implement a compliance and transaction system from scratch. Since MAP is open-sourced and decentralized, it acts as compliance ledger that enables security token platforms and exchanges throughout the industry to leverage its globally compliant protocol.

A guide to issuing digital securities on Swarm

Further Reading:

- Market Access Protocol:
<https://medium.com/swarmfund/tagged/market-access-protocol>

Introduction to Digital Securities

Asset tokenization (converting an asset into a digital security) is a complex process that begins with the token issuer consulting with legal and tax advisors about their objectives and the parameters of the endeavour.

This guide provides an overview of the overall process and legal, compliance and technical considerations when tokenizing any asset, as well as a high level description of the steps involved.

Use Cases

Virtually any asset can be converted into a digital security or *tokenized*. Typical use cases that can benefit from tokenization are:

- Raising capital for an investment opportunity
- Shared ownership of an asset
- Divesting from / Selling assets
- Asset management
- Shared governance

Swarm's infrastructure offers a full-stack tokenization solution designed to enable regulatory compliance from token creation, configuration, issuance, fund raising, distribution to post-distribution activities such as dividend issuance, asset governance, investor administration, reporting and communications.

Issues to consider when tokenizing an asset

Before commencing the process of capturing and tokenizing an asset on the blockchain, a potential token issuer must consider the following important issues. This is a non-exhaustive list. It is important to discuss these with legal and tax experts in the relevant jurisdiction.

1. **Asset Type:** The type of asset being tokenized can affect how the token will be structured.
2. **Jurisdiction:** The token issuer's place of incorporation, the location of targeted investors, the physical location of the underlying asset, and any restrictions related to the location where transactions are processed.

3. **Legal Entity:** Determine the ideal corporate structure and legal residence for the legal entity (LLC, SPV, partnership, etc...) which acts as the interface between token holders and the underlying asset.
4. **Regulatory Compliance:** In each jurisdiction, offering a security as an investment is regulated by laws that govern who can participate in the offering, the requirement to ensure the legitimacy of the source of their funds and the level of accreditation or investor sophistication they need to demonstrate. These matters are important when a token issuer configures the token's transfer restrictions.
5. **Funding:** Will the purchase of tokens (and the allocation of capital) be restricted to cryptocurrencies or will it also accept *fiat* currencies, and how is this funding going to be raised.
6. **Marketing:** It is crucial to promote any fundraising activities to the appropriate target audiences in the relevant markets. A well-planned, strategic campaign is essential to successful fundraising.
7. **Custodianship:** For larger and institutional investors, it is important, for security and compliance requirements, to ensure that allocated capital is stored securely.
8. **Secondary Trading:** As with token issuance, secondary trading of security tokens is strictly regulated in most jurisdictions. It is important to secure trading functionality with exchanges that understand and can ensure regulatory compliance.
9. **Post-Allocation Considerations:**
 - a. Investor Communication and Community Management
 - b. Dividend Payouts
 - c. Reporting and Updating NAV
 - d. Auditing
 - e. Tax
 - f. Governance

Overview of tokenization using Swarm

Creating and issuing a digital security involves a number of steps, some of which are optional and depend on the token issuer's objectives. Below are described some of the key possible functionalities when tokenizing using Swarm.

Basic Token Setup	Defining the fundamental properties of the token
Additional Token Configuration	Defining any rules or restrictions relevant to the transfer and ownership of the token
Token/Asset Pairing	Describing the underlying asset to tokenize and linking it to the token, with the optional formalized legal relationship that enshrines token holders as fractional owners of the underlying asset via a legal entity.
Deployment	Committing the token properties and a reference to its configuration file to the blockchain.
Fundraising	Acceptance of funds in exchange for tokens through a private or public token sale.
Issuance	Distribution of tokens to designated recipients or participants in a token sale.
Post-Sale Activities	Communicating with and managing the investor community, including secondary trading, dividend payouts, token replacement, reporting requirements, ongoing valuations, auditing and governance.
Liquidation Strategies	There are numerous ways to conclude a security token issuance, from a public listing to token redemption.

Tokenization using Swarm

Creating a token is broken down into two distinct steps:

1. Basic Token Setup - Creating an ERC20 compliant token.
2. Additional Token Configuration - Extending to an SRC20 standard token
 - a. Configuring Compliance & Asset Pairing

Basic Token Setup

In the current iteration of the Swarm platform, token issuers are required to have an approved syndicate manager account in order to be able to set up a token.

Register for a Syndicate Manager account at <https://invest.swarm.fund>

The first step in creating a token is defining its fundamental properties. This is required for all use cases, from the simplest scenario of a token with no underlying asset, to a fully regulatory compliant asset-backed public security token offering.

These fundamental properties are written into a **Token Contract**, which adheres to the ERC20 standard. Upcoming standards that are currently in development (eg, ERC-1400) will be supported when the framework is sufficiently decided upon and adopted.

Features	
Fixed token supply	<i>Does not</i> represent ownership of a real asset
Ticker Code	No compliance features
Token Name	No ownership restrictions
	No transfer restrictions

Examples	
Membership Token	Governance Token
Cryptocurrency	

Checklist	
<input type="checkbox"/>	Token Name (eg, ABC Token)
<input type="checkbox"/>	Total Supply of Token (eg, 1,000,000)
<input type="checkbox"/>	Token Ticker (eg, ABC)

Additional Token Configuration

In this step, token issuers can extend the Token Contract by setting up custom rules and restrictions regarding the ownership and transfer of the token, as well as how to pair an asset with the token.

This is an optional step, but is required for digital securities that need to comply with securities regulations in various jurisdictions. After this step, the token will also adhere to the SRC-20 standard and be MAP-compliant. SRC-20 tokens have easy access to the pools of qualified investors on MAP.

As of the current iteration of the Swarm platform, this step includes defining the level of investor qualification necessary for an individual to receive a token. In future iterations, token issuers will be able to select from a range of qualification providers for investor authorization. Read this [guide](#) for an overview of regulations covering investor qualification in various jurisdictions. Please find [here the AML policy](#) for Swarm.

Options are:

- *No qualifications required*: Permits investors whose identity has not been verified.
- *KYC/AML*: Only permits investors who have passed Customer Due Diligence (CDD), whose identity has been verified and who have passed Anti-Money Laundering checks.
- *Accredited Investor*: In the USA, permits Accredited Investors. Globally, permits investors who have passed CDD.

Coming Soon: [MAP](#) - Swarm's decentralized compliance layer will permit granular geographic application of transfer restrictions with differentiated requirements, and enforcement of other considerations, such as ROFR, 99-investor rules, and others.

Features added in this step	
Investor Qualification	Transfer restrictions

Examples
Regulatory compliant security token
Checklist
<input type="checkbox"/> Legal opinion on regulatory compliance requirements.

In the next step, an asset can be paired with the token. If this isn't necessary, proceed to deploying a token.

The Asset

Any tangible asset (real estate, companies, index funds, etc) or virtual asset (video game objects, cryptocurrencies) can be paired with a token, creating an asset-backed digital security.

Adding an asset

Before you can connect an asset to a token, there are different questions we advise to consider. These involve the following:

- **How to create the legally binding connection between the token and the asset?**
 This can involve details on the underlying agreements (e.g. share purchase agreements, limited partner purchase agreements, other ownership documentation) or prospective documents and terms that the syndicate is aiming to execute, once certain milestones (e.g. soft cap) is reached
- **How to create the trust with the investor that the asset truly exists?**
 Try to think from the perspective of the investor. Try to provide information that instills confidence or proof that the underlying asset really exists (use certificates, detailed data, videos, link to registries, etc.). Ideally this happens in conjunction with sources of external validation.
- **How can you update investors and token holders continuously and give them confidence?**
 Also, try to create think of ways how you can uphold that confidence on an ongoing basis. Are there reports, KPIs, data, etc. that you are planning to share?
- **Are there ways for investors to redeem the underlying value?**
 Consider defining processes by which the investor could get access to the underlying value, should she decide to no longer hold it in a digital form.

The general rule is, the more underlying data and transparency is provided the higher the confidence of an investor in the asset.

Once these questions are specified, assets can technically be added quite easily. Within the token description you can include definitions and descriptions using names, location, images, references to documents and uniquely identifying numbers or codes that reference the asset.

Once paired, assets are given a Swarm Tokenized Asset Registry reference number (STAR ID). STAR is Swarm's index of tokenized assets, providing token holders with the functionality to identify assets using a printable QR-type code. STAR further allows investors to perform independent verification of the underlying asset, and reference ongoing external documentation such as NAV.

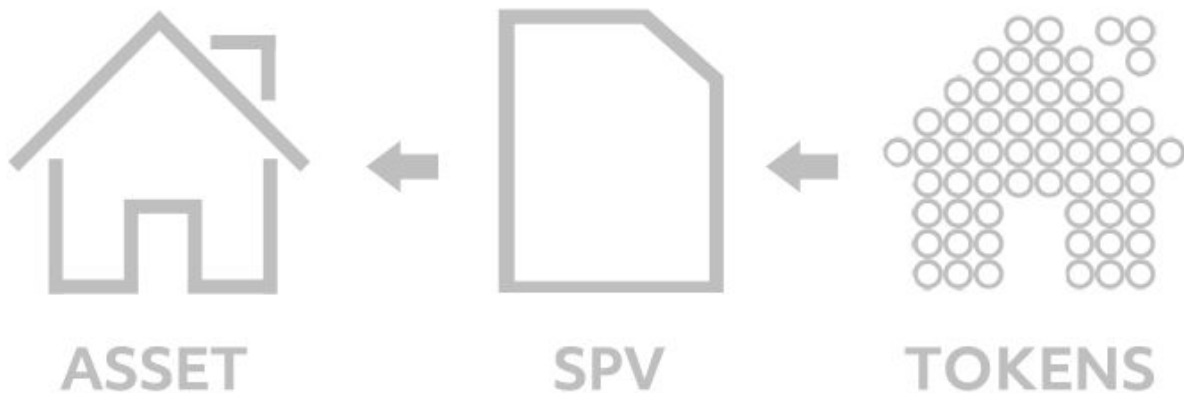
Note: currently the metadata can be referenced in short form. We are working on the next level hereto, which will be available shortly as an open infrastructure. On that infrastructure, data about the asset and external channels can be made universally accessible, can be modified over time, changes can be tracked and it can be verified to be connected with the specific token.

Token/asset pairing

Pairing enables the rights of token holders to ownership of the asset. Pairing is enforced programmatically (by code) and/or legally.

Legal pairing typically requires the use of a legal entity, called a Special Purpose Vehicle ("SPV"), which is dedicated to hold the asset. The legal form (LLC, partnership, etc) and domicile of the SPV depends on the token issuers considerations and is formalized by submitting a legal document (Articles of Association and Token Sale Agreement) in the pairing process.

The SPV acts as the interface between token holders and the underlying asset, as described in the agreement. It facilitates legal fractional ownership in the underlying asset.



In order to instill confidence in investors, Swarm recommends that legal pairing be done before commencing a token sale. This process derives a hash value from the SPV Articles and adds it to the blockchain, associating the token with the SPV.

When considering legal pairing of an asset, counsel should advise on:

- structure and place of incorporation of the entity
- the provision of the binding agreement.

Any resulting legal ownership of the asset by the token holders is independent of Swarm and can continue to exist independently from the Swarm Foundation.

Features added after pairing	
Token holders' ownership of an asset	Asset ownership is cryptographically verifiable
	Asset ownership is legally enforceable

Examples
A token representing ownership of a collectible
Non-fungible assets
Intangible assets (For example, Time or Friendship Tokens)
Tokenizing real estate for the purposes of inheritance or putting in a trust

Checklist	
Asset	
<input type="checkbox"/> Name	<input type="checkbox"/> Image
<input type="checkbox"/> Description	<input type="checkbox"/> Unique Identifier
<input type="checkbox"/> Location	
SPV	
<input type="checkbox"/> Articles of Association or similar documentation	

Deployment

Deploying a token is the process of committing the token's fundamental properties, ownership and transfer restrictions, any paired assets, and related legal entities to a blockchain. This step allows for the subsequent issuance and distribution of the token to anyone qualified to hold it.

The deployment can be made conditional upon a successful process of fundraising (as explained in the next section). So the token is not created (minted) if the fundraising does not successfully complete.

Blockchain's fundamental immutability secures the token's history and provides a transparent record of all transactions and token transfers. It also provides an accountability function that protects token holders from actions that may adversely affect their holdings or investments, for example:

- Increasing the total supply of the token and diluting its value
- Changing the underlying asset which the token represents

Deployment of a token requires a small transaction payment on the blockchain of choice that the token contract should reside on (Ethereum, Neo, Stellar). For the moment, Swarm only supports the deployment onto the Swarm blockchain, but that may change in near future.

Fundraising

A key feature of the SRC20 tokens is the ability to raise capital from qualified investors in a regulatory compliant manner. Token issuers raise capital by offering tokens in exchange for cryptocurrencies or fiat.

Note, that in Swarm's architecture, fundraising is simply a module that is independent from the token creation (minting) and can either be done before the token creation, in the aftermath or on an ongoing basis. Also, to match the regular procedures of the capital markets, the fundraising module can be executed in several sequential stages or even on an ongoing basis, all of which depend of the type of underlying asset and operational set-up of the syndicate.

Fundraising is heavily regulated in most jurisdictions, and may require registration of the digital security with appropriate authorities. Consider (and consult with legal counsel) whether your token is deemed a security, a utility/commodity or something else. Security tokens must have ownership and transfer configurations set accordingly to ensure regulatory compliance.

What are the costs associated with fundraising using Swarm?

Swarm does not charge any fees for issuing tokens, initiating or running a token sale.

To support the ongoing operations and growth of the Swarm network, the only requirement is that token issuers, that run a *public token sale* and who successfully reach their funding goal, must stake an amount of SWM for the life of their token. Please check with your Swarm contact about the latest policies on issuance stakes.

This *issuance stake* is deposited into a smart contract, which then enables the release of raised funds and the tokens to be issued to investors,

Staked SWM tokens are returned to the token issuer whenever outstanding SRC-20 tokens are redeemed and burned, up to the full staked amount.

Token sales

A token sale involves raising funds from *investors* in exchange for the issuance of tokens. It is strongly recommended to incorporate a well-planned marketing campaign to accompany the token sale.

Token sales can be private or public. It is important to understand and abide with the regulations in the applicable jurisdiction.

Private token sale

Token issuers may elect to conduct a private sale of tokens. This type of offering is limited to selected investors which the token configures by a whitelist of wallet addresses that are permitted to participate.

Public token sale

Swarm supports public token sales for both utility and security tokens.

Utility tokens

A *utility token* offering has the objective of selling access to a product or service, and is not designed as a security. It is analogous to offering tokens that can run a laundromat.

Security tokens

A *security token offering* has the objective of selling tokens that represent a participation in an underlying security and derive their value from the management or value appreciation of some asset. It is considered an investment.

Raising funds by selling tokens requires consultation with legal counsel to determine whether a token qualifies as a utility or security.

Setting up a public security token sale using Swarm

The following checklist serves as minimum requirements and preparations to be able to schedule a token sale on Swarm.

Checklist	
Token Issuer	
<input type="checkbox"/> Token Issuer Profile	<input type="checkbox"/> Team Member Profiles
Marketing	
<input type="checkbox"/> Creative Assets	<input type="checkbox"/> Marketing Collateral
<input type="checkbox"/> Community Building Strategy	<input type="checkbox"/> Marketing Budget and Plan
Financial	
<input type="checkbox"/> Amount to raise (soft/hard cap)	<input type="checkbox"/> Price per token (in base currency)

<input type="checkbox"/> Currencies Accepted (USD,SWM,BTC,ETH,DASH,DAI)	
Offer Details	
<input type="checkbox"/> Project Description	<input type="checkbox"/> Team Track Record
<input type="checkbox"/> Investment Strategy	<input type="checkbox"/> Risk Analysis
<input type="checkbox"/> Expected Returns	<input type="checkbox"/> Funding Period
Legal	
<input type="checkbox"/> Prospectus	<input type="checkbox"/> Token Sale Agreement

Scheduling a token sale is a simple process and involves providing the above information into the Swarm platform. When scheduling a token sale, it is recommended to allow sufficient time in advance of the sale to create market awareness and plan quality marketing activity.

The mechanics of a token sale

Token sales run for a predetermined period with the objective of raising cryptocurrency in exchange for tokens.

Swarm currently supports investing using BTC, ETH, DAI, DASH and SWM. Support for further currencies (including a wide-ranging basket of fiat currencies) will be available soon.

Participation in a token sale is restricted to those investors that meet the compliance requirements configured by the token issuer in the token's contract. Funds invested by unqualified investors will not be eligible for token transfers or to hold to such tokens.

Qualified investors allocate capital to the opportunity in any of the accepted asset types. Allocating capital is done by locking funds against a specific investment opportunity. During the funding period, allocations are maintained in their original deposited currency. When the opportunity reaches its cap, and the issuance stake is made, allocated funds are exchanged for tokens.

Token issuers can monitor the token sale via their account, are provided with important notifications, and are encouraged to communicate with potential investors via the Swarm platform and in social channels and communities.

A token sale closes as funded when it:

- reaches the end date and has raised at minimum the soft cap, or
- as soon as the hard cap is raised.

The release of funds as well as the issuance of the tokens can be dependent on other conditions. More on that and the issuance of tokens to investors against successful completion of a fundraise to investors are covered in the next section.

Issuance

Issuance Stake

The issuance of tokens, and their distribution to investors require the token issuer to stake an amount of SWM proportional to the funds raised. The amounts of staking requirements depend on the funding volume and have a minimum and maximum amount.

As soon as the token issuer deposits at least the minimum required staking amount of SWM into a smart contract, it triggers the issuing and distribution of the corresponding SRC20 tokens.

The token issuer can also keep larger amounts than the minimum staking requirement in their staking wallet. That way the provision of funds as well as the issuance of tokens are not blocked by the required increments. This is particularly useful for ongoing fundraising, where syndicates allow investors to constantly provide and retract investment against declared net asset value.

For tokens that are created outside of a fundraise - e.g. as a digital representation of assets that already owned by shareholders - there are no staking amount required.

At any point when SRC20 tokens are destroyed / burned by the token issuer or any token holder, the smart contract holding the issuance stakes, automatically release proportional amounts of the staking amount back to the token issuer.

Tokens can be issued:

- after a successful token sale, or
- without an associated purchase, contribution or investment of funds.

If a token has transfer and ownership restrictions configured, the token's compliance contract uses Swarm's Market Access Protocol to restrict token transfers only to qualifying token holders. It will not permit transfer of tokens to unqualified token holders.

Issuing tokens after fundraising

Subsequently to a successful fundraising for a token, the tokens are issued to investors in an amount equivalent to their investment. In determining token allocation, the value of invested crypto is taken as a snapshot at the moment when the fund closes. Until that moment the custody of the raised funds are with the individual investor and can be retracted at any time. This changes at the moment of closing the fundraise - either based on reaching the end date or reaching the defined hard cap. At that moment the raised capital remain in each if the deposited currencies and is handed over to the token issuer's account. The subsequent conversion of capital to *fiat* is then in the responsibility of the token issuer.

Note: As part of their investment proposal, token issuers can define additional conditions that are needed to close the fundraise. These can be milestone for the syndicate specified in advance (e.g. forming of the SPV entity, presentation of a asset purchase agreement based on previously communicated terms, etc.). In that case the syndicate would present the new facts and investors would be able to review in an adequate time frame to confirm their investment subscriptions.

Issuing tokens without funding

This type of issuance is equivalent to allocating a pre-existing *cap table*. Each recipient will need to provide a wallet address to send the tokens to.

Post-Distribution

After distribution of tokens to investors or recipients has taken place, there are various administrative, financial, compliance and strategic actions that a token issuer may choose or be obliged to take.

Investor Relations and Communications

Swarm recommends that token issuers inform investors and token holders about key events and updates to their investment and the management of the underlying asset. This may be facilitated in a number of ways, including via social channels, the Swarm platform, and in future, via smart events that can act as notifications via specific communication channels.

Examples of important events that should be communicated to the investor community are:

- Secondary Exchange Listings
- Dividend Payments
- Net Asset Valuations (NAV), audits, and other financial reporting.
- Unexpected changes in the underlying asset

We are working on open infrastructure that will help improve this communication and make it trustful and reliable.

Financial

Dividends

The Swarm infrastructure supports the payment of dividends by the token issuer to token holders. Token issuers will be able to use a payout module to distribute value based on token holder preferences.

Net Asset Valuations (NAV) Reports

NAV reports are critical to the investor community, are required to be published at least once a year and are available on the blockchain for investors to review. For certain asset categories NAV reports will be done on an ongoing basis. NAV values represent a price basis for further token issuances.

Token Administration and Functionality

Liquidity and Secondary Trading

Secondary trading of the issued tokens is supported by any exchange that supports MAP and the SRC20 token standard. These could be centralized or decentralized exchanges.

In the future, additional ongoing liquidity solutions may be supported, for example collateralization of real assets, liquidity contracts, and margin trading.

Note, that secondary trading of securities is a highly regulated area, which is currently a highly dynamic regulatory focus area. We are working with various partners in different jurisdictions on the adaption of MAP and SRC20 and to power processes around security token tradability and liquidity.

Token Replacement

Token replacement can occur in the case of someone losing access to their tokens. This involves the token issuer validating ownership, burning the old tokens, and re-issuing new ones.

Governance

The rate of adoption and success of real asset tokenization will strongly rely on the ability of token holders to easily express their desires, through governance, regarding how the underlying asset or investment opportunity should be managed. A key element to the Swarm infrastructure is the Liquid Democracy Voting Module that enables token holders to vote on governance issues regarding the specific SRC20 tokens or the overall network. Votes can be binding or non-binding, depend on the specific charter and governance defined by the syndicate and can be structured in a number of ways.

Certificate of Good Standing

To manifest a consistent base governance for the security tokens on the network, Swarm is introducing a "Certificate of Good Standing". This certificate is issued as a result of a vote taken by token holders of any particular SRC20 token. These votes are required to be held quarterly, in which the SRC20 holders need to confirm, that the syndicate is in good standing. This intends to ensure that syndicate managers remain accountable and are incentivized to manage the investment appropriately. Additionally, token holders may at any point outside of the quarterly schedule decide to vote on whether to issue a Certificate of Good Standing.

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In the case of a vote not passing and a Certificate of Good Standing not being issued, certain sanctions may apply. E.g. it can trigger another election to determine a new manager for the investment.

Once a new syndicate or asset manager has been identified, ownership and management of the governance wallet transfers to them.

Compliance-related Obligations

The Swarm platform has many built-in functions which support token issuer's compliance-related obligations. Auditing, and reporting tools are available on the Swarm platform and third party solutions can be built on top of the existing infrastructure for specific needs.

Liquidation Strategies

IPO

In cases, where the tokenized asset represents a private entity or participation in such, that company may decide to perform an Initial Public Offering (IPO). In that case the private company or corporation raises investment capital by offering its stock to the public for the first time and it can impact the status of all shares in the entity. The exact mechanics of how this would affect existing token holders are subject to specific regulation and procedures. The token issuer will need to define the specific mechanisms, but a potential outcome could be that token holders would be able to redeem their tokens in exchange for publicly issued securities or proceeds from the IPO.

Redemption / Token Burning

The token issuer may at any time offer investors or token holders the opportunity to redeem their tokens. Redemption is the act of a token issuer buying some of the outstanding tokens with the objective of reducing the number of tokens available on the open market. Once the corresponding value is redeemed by the token holder, the token issuer is required to burn the corresponding tokens. Reminting of new tokens only happens when a corresponding value is brought into the syndicate.

What to do next?

This document forms both a conceptual outline and a practical guide to the process of preparing for, issuing and distributing digital securities using Swarm. A full implementation of the processes described in this guide is currently underway, culminating in the release of a self-serve open interface that provides all the necessary tools a token issuer requires. To stay up-to-date with product developments from Swarm, sign up for the Swarm newsletter at <https://swarm.fund/>.