

Tokenisation: The Technical Aspect_

What is Tokenisation?

Before answering this question, we should first define what is a TOKEN.

A token in the cryptocurrency space is a unit of value issued by an organization that is supported by an existing blockchain. Tokens can be grouped into several different types. Each token type provides unique features and can be best described by how they serve the end user.

We will use the groups as defined by FINMA, the Swiss financial regulator:



PAYMENT TOKENS

Payment tokens are synonymous with cryptocurrencies and have no further functions or links to other development projects. Tokens may in some cases only develop the necessary functionality and become accepted as a means of payment over a period of time. They usually have no underlying assets.



UTILITY TOKENS

Utility Tokens are tokens which are intended to provide digital access to an application or service.



ASSET TOKENS

Asset tokens represent assets such as participations in real physical underlying, companies, or earnings streams, or an entitlement to dividends or interest payments. In terms of their economic function, the tokens are analogous to equities, bonds or derivatives.

This article will talk about Asset Tokens, therefore we speak about “tokenisation” in the context of representing assets through tokens. This is important to be noted, as representing assets like for example shares, bonds or derivatives comes with additional requirements like the possibility to pay dividends or interest to the token holders or limitation in the ownership. Such demands have to be addressed by the technical solution provided.

What is the Technical Foundation for Tokens?

Tokens are based on the blockchain technology, which allows to register the ownership and characteristics of a token in a distributed ledger. There are several blockchain platforms that provide a technical base to register tokens, for example Ethereum, Stellar, Hyperledger, R3, Ripple, or EOS. Each platform offers a set of functionalities. This set of functionalities is one of the factors taken into consideration by the developer to choose the best fitting blockchain technology. Other factors can be whether it is an open source technology or not, the size of the community using the technology, the number of distributed ledgers etc.



Properties of Distributed Ledger Technology (DLT)

Smart Contract

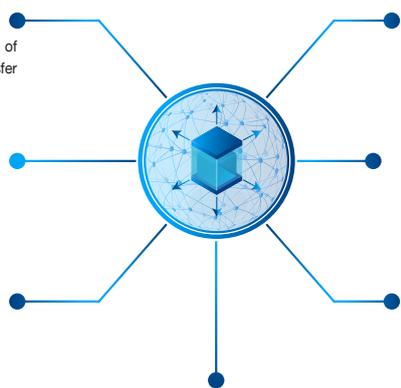
The blockchain allows the execution of programs that define actions like transfer or sale.

Secure

The information on the ledgers are encrypted.

Verified

The encrypted input on the ledger is secured with a hash, that allows a proper verification of the ledger.



Distributed

The blockchain information (ledger) is distributed on numerous computers.

Immutable

Keeping the information redundant in numerous ledgers and the comparison of these ledgers make the information immutable.

Time-stamped

A transaction timestamped is recorded on a block. Each transaction is timestamped and the timestamped secured.

Confidential

Participants are not listed with their name but with their user ID. This makes it difficult for nonauthorised users to access the information.

About Smart Contract

A Smart Contract is piece of computer program stored on a blockchain that is executed automatically when a predetermined condition is met. Smart contracts are typically used to automate the execution of an agreement so that all participants can be immediately certain of the outcome without any involvement of an intermediary.

Smart contracts aims to remove the human factor of decision making, which is proven to be the most error prone and unreliable element of the standard traditional contracts. Smart contracts are programmed using an if-then logic making them easy to code and

seamless. The actions defined in a smart contract are executed by a network of computers when a predetermined condition is met and verified. These actions could include transferring funds to appropriate third parties, approving a loan request and etc. Once a contract is deployed and executed in the blockchain, it can't be stopped or altered. This gives a strong safety in regards to the fulfillment of contractual obligations.

It is important to note that not all the blockchains allow to program Smart Contracts. This is another important element to distinguish and to select the best fitting blockchain system.

How to use Token as Asset Tokens

Ethereum platform created a special protocol for the creation of tokens, the ERC20, which stands for Ethereum Request for Comment with 20 as the identifier of the version of the standard. Tokens based on ERC20 have become particularly popular as the token of choice for ICOs (Initial Coin Offerings).

The ERC20 protocol contains several functions required by tokens to comply with this standard:

TotalSupply: The total token supply.

BalanceOf: The account balance of the owner's account.

Transfer: To execute transfers of a defined number of tokens to a specified address.

TransferFrom: To execute transfers of a defined number of tokens from a specified address.

Approve: To allow the withdrawal of a set number of tokens from a specified account

Allowance: To return a set number of tokens to a specified account.

The ERC20 protocol is the base for new protocols, that address specific requirements like the change in the total token supply (ERC621) or better handling of the approval process (ERC223). Developers are free to add functionality as long as they fulfill the minimal requirements of a standard.

This allows to address topics like the identification of the token holder, limitation of ownership based on nationality or imposing of a minimal holding period. Some of these add-ons are required for compliance with the jurisdiction of the issuing entity or based on the nature of the token (enabling of dividends or interest payment to the token holders).

The token protocol has to be chosen based on which blockchain system is chosen, the legal environment in which it is used and the specific use of the asset token in regards to the underlying asset. CRESCOTec, the IT company of the CRESCO Group, helps clients to define these parameters based on their business case and programs the token according to these requirements.

The Token Protocol Of SECDEX

SECDEX is a Seychelles based Securities, Commodities & Derivatives Exchange. Hensley&Cook, the corporate service specialist of the CRESCO Group, is a sponsor on SECDEX and lists companies on this stock exchange as part of a normal IPO. In addition, SECDEX allows the listing of tokens on its platform and provides solutions to custodize assets and issue tokens against the asset in custody. Hensley&Cook helps clients in this process and supports the whole ICO (Initial Coin Offering) process.

The token of choice for SECDEX is a Ethereum based token with an extended ERC20 protocol. The extended protocol provides all the functionality required by the Financial Service Authority Seychelles, the regulator of SECDEX. The token protocol allows to pay

dividends to token holders and to support compliant trade, for example based on Smart Contracts.

CRESCOTec has the expertise to guide and support the process of tokenisation for the use in the SECDEX environment. This allows clients to get the tokenisation done from A to Z from experts of the CRESCO Group.

