MME

Conceptual Framework for Legal and Risk Assessment of Crypto Tokens

Classification of decentralized blockchain-based assets

May 1st, 2018
"Block 2" Version

Executive Summary

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"Block 2" Version – May 1st, 2018

The age of tokenized ecosystems has begun, the shift from centralized to decentralized blockchain-based creations and the transfer of assets is ongoing. Our current world is full of different asset classes ranging from money (in a narrow sense) to gold, real estate, securities, intellectual property ("IP") etc., many of which are difficult to physically trade or subdivide. Distributed ledger technology, or more specifically blockchain technology, is increasingly providing solutions to this problem.

Blockchain technology can design digital information units that contain elements of a property right (according to civil law concepts) to which an owner has direct and exclusive access that can be defended against third parties (right in rem). It contains the tools to program a unique set of information that attributes a property right and enables a secure and registered public transfer of the new type of digitally-defined property: Blockchain Crypto Property ("BCP").

In addition, the introduction of Smart Contract Systems ("SCS") at the application level of the blockchain has added immutable functions and property terms to BCPs, enabling not only the execution of bilateral and multilateral programs in accordance with contractual terms and conditions, but also the ability to create co-ownership like organizations. A BCP is therefore defined as a digital property that can be registered on the blockchain, in addition, it may carry out coded functions governed by an SCS, following coded or manual input by an agreed party (called an "Oracle").

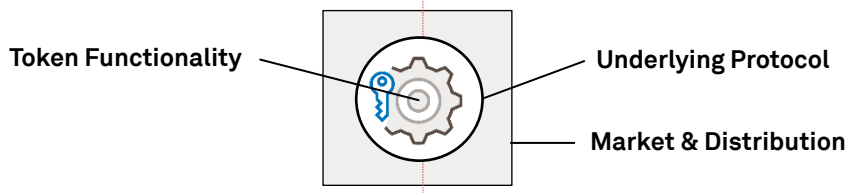
In order to consistently assess the legal and tax implications, associated risks and investment suitability of BCPs in the tokenized ecosystem, a reliable classification model and risk assessment criteria are indispensable. By applying an assessment method based on functionality, rather than on a particular country's legal concepts, the classification and risk assessments can be considered in all jurisdictions, regardless of national legal and regulatory frameworks. Though the BCP classification may ultimately lead to different regulatory treatments in each jurisdiction, it may facilitate the multijurisdictional understanding of existing and new applications in the tokenized ecosystem, as well as identify coins which may not have the essential characteristics of digital property (i.e. not a BCP). The objective of the risk assessment and resulting BCP rating is to increase awareness and serve as a basis for establishing governance and diligence standards for all aspects of creating, offering, transferring and holding tokens.

With the above in mind, a "Conceptual Framework for a Legal and Risk Assessment of Blockchain Crypto Property" was developed. The current "Block 2" version includes several amendments to the initial genesis version from September 2017, including a more detailed classification and Token development stages.

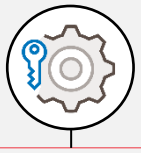
This paper will:

- provide functional classification leading to three different BCP Classes;
- introduce three BCP Development Stages; and
- provide a risk assessment model for BCP, resulting in BCP Risk Categories.

BCP Classification and Risk Assessment Method



1. Functional Token Classification

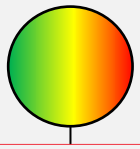


BCP Class 1	
Native Utility Tokens	
No legal counterparty	
BCP Class 2	
Counterparty Tokens	
Natural/legal person as counterparty	
BCP Class 3	
Ownership Tokens	
Right in rem	

BCP Development Stages

- Operational BCP
- Pre-Operational BCP
- Pre-BCP

2. Risk Assessment



- Functionality & Protocol Risks
- Storage & Access of PIK Risks
- Regulation & Money Laundering Risks
- Market & Counterparty Risks

Risk Extent
Risk Probability
Net Risk

Weighting of
Risk Factors

→ **Risk Category**
A, B, C, D and E

BCP Class 1

Functional & Legal Perspective

Risk Category B

Investor's Perspective

Definitions

Blockchain Crypto Property ("BCP"): (1) Digital information containing all elements of a property right from a functional equivalence perspective, (2) that is registered on a blockchain or in an alternative distributed ledger, (3) which can be transferred via a protocol, and (4) that may (or may not) carry out additional functions governed by a SCS following coded and/or manual input. This document uses the term BCP or Token, which is the term widely used by the blockchain community.

Access and Intermediation: A user has direct access to BCP using his private key ("PIK"). The BCP is visible on the protocol through the cryptographic address of the Public Key ("PUK"). Intermediary functions are only possible through the transfer of single-signature or use of multi-signature private keys. Co-ownership is made possible via immutable code-defined SCS functions that cannot be changed once released on a protocol.

Blockchain Technology: A blockchain is a type of distributed ledger in the form of a continuously growing list of records based on blocks, which are linked and secured using cryptographic signatures. Each block typically contains a hash pointer as a link to a previous block, a timestamp and transaction data. Blockchains are inherently resistant to data modification. From a functional perspective, a blockchain can serve as an open, distributed ledger that can record transactions between two parties (accounts) efficiently and in a verifiable and permanent way.

Distributed Ledger Technology: Database of replicated, shared and synchronised information that is shared in a decentralized manner among network users.

Input and Output Function (Conditions): These functions allow the BCP to interact with other BCPs or external data. The input and output functions are governed by an SCS, following coded or manual input by an agreed third party (called an "Oracle").

Platform(s): A platform allows transactions where BCP can be created and/or transferred via protocols. There are infrastructure platforms such as Ethereum ("Infrastructure Platforms") and specific user platforms built on such infrastructure platform ("Application Platforms"). Platforms frequently include an in-built algorithm for creating, transacting and burning digital units.

Registration Function (Terms): This function defines the legal nature of the BCP. There are basically three categories: (1) property right of an account entry (e.g. of a Bitcoin), (2) derivative of a property right leading to a legal right against a counterparty (share in a legal entity or fund, real estate, movable item, registered IP); and (3) a direct property (e.g. on IP).

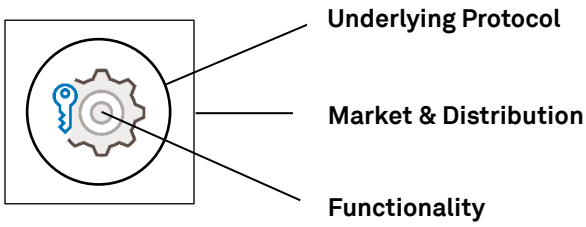
Smart Contract System: The SCS is a distributed-ledger-based computer protocol intended to define, verify and enforce the functions of a BCP.

Tokenizing: A BCP can include two sets of functions: (1) registration functions ("terms"); and (2) input and output functions ("conditions"). Tokenizing is the programming of all or part of these functions to a BCP. A Token will be issued and functional once released on a protocol.

Introduction: Relevant Data

The BCP classification and risk assessment is based on an analysis of the underlying protocol, market-related data and token functionality.

The data examined will represent the basis not only for the functional classification and risk assessment, but also for the resulting BCP rating.



Underlying Protocol Data

The first part, the evaluation of the underlying Token protocol, involves a broad range of different technical and conceptual aspects which may have an impact on the stability, security and/or proper function of the BCP. Such aspects are the:

- blockchain protocol used;
- launch date (history of stability);
- timestamping and consensus model (proof of work/stake/authority/hybrid or different models);
- security
- governance model;
- hash algorithm (scrypt/SHA/others);
- number of full nodes;
- implementation of code based multi-signature PIK;
- possibility of transaction analysis (transparency vs. pseudonymity vs. anonymity);
- implementation of a unit cap or another deflation model;
- past hard-fork history and future planned hard-forks;
- IP rights on underlying protocol.

Market & Distribution Data

The market evaluation focuses on the financial key figures as well as on the availability and tradability of the BCP. The financial data of BCP is analysed for a reference period of the last 30 and 180 days and is set in relation to Bitcoin ("BTC") as the first BCP. Therefore, relevant factors are the:

- current market cap;
- exchange listings (number of listings, importance of exchanges);
- price high/low (30d & 180d & in relation to BTC);
- historical volatility (30d & 180d & in relation to BTC);
- trading volume high/low (30d & 180d & in relation to BTC);
- market cap high/low (30d & 180d & in relation to BTC).

The distribution data relates to aspects of pre-functional/functional Tokens as well as the contribution structure (public and/or private sales). They further include information regarding the method of contribution, cross-border aspects as well as issuing structure and governance. Relevant points are the:

- early contribution, pre-sale, pre-financing, pre-allocation, community allocation methods;
- price finding mechanism, contribution cap;
- issuing legal structure;
- transactional types and duties;
- Anti-money laundering ("AML"), contributor suitability compliance;
- cross-border offering;
- distribution control;
- SCS/code audit;
- governance.

Functional Data

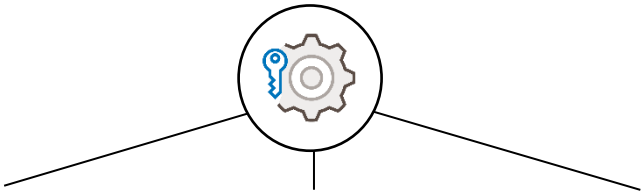
The functional evaluation of the BCP is of high importance for the classification of the BCP. Relevant functional aspects are the:

- use of the registration function and conditions;
- existence of underlying assets (IOUs, shares or others); and
- target use of the BCP (e.g. medium of exchange, unit of account and store of value, access right to infrastructure, access right to application/ownership definer)

Functional BCP Classification

This framework proposes a classification of Tokens or BCPs based on their function or target use. Key elements that further define the classification include the existence and type of counterparty along with the presence of an underlying asset or value. For example, if the Token includes some form of asset and a counterparty, it will have significant legal and regulatory differences compared to a native "currency-like" Token. As defined above, all BCPs are transferable property that may carry out certain functions, including the transfer of rights or revenue.

Categorizing tokens based on these criteria aims to clarify a Token holder's rights, allowing the community to precisely define a Token's value, mitigate any risks and provide a supporting framework. Following the above, our BCP distinguishes between three major classes of BCPs and Tokens:



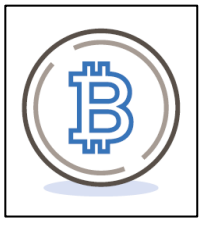
No legal counterparty	Natural/legal person as counterparty	Right in rem
BCP Class 1	**BCP Class 2**	**BCP Class 3**
Native Utility Tokens	**Counterparty Tokens**	**Ownership Tokens**

BCP Class 1: Native Utility Tokens

BCP Class 1 Tokens can be transferred on a decentralized ledger from user 1 to user 2, but do not grant any rights towards a counterparty. The owner of a Native Utility Token does not have any relative or absolute right, except for the right relating to the Token itself.[1] The fact that a Token might be used on a specifc blockchain system, for example as "gas", does not exclude it from being assigned to the BCP Class 1. The relevant criteria for this category is the lack of a relative right against a counterparty, such as the Token generator or a third party. BCP Class 1 Tokens can be divided into the following four sub-classes:

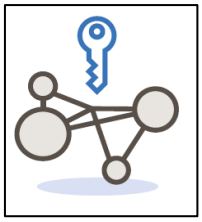
(1) Basic Tokens

Basic Tokens are simple mediums of exchange, units of account and stores of value without further functionalities. Examples of Basic Tokens are Bitcoin, Bitcoin Cash, Litecoin, Monero or ZCash.



[1] The right on the Token itself depends on the technical and conceptual model of the underlying blockchain. In the case of blockchains based on unspent transaction outputs (UTXO) such as Bitcoin, those UTXO might be seen as the units of value. In account-based-blockchain-models such as Ethereum a user would have a right on the (externally owned) account linked to a specific asymmetric key pair.

(2) Infrastructure Access Tokens



In addition to acting as mediums of exchange, units of account and stores of value, Infrastructure Access Tokens provide the possibility to use a specific blockchain infrastructure or technology that does not exclusively refer to peer-to-peer payments. Examples of Infrastructure Access Tokens are Ether, Ether Classic, Cardano, Lisk, ICON, EOS.

(3) Application Access Tokens

Application Access Tokens provide access to a specific application or business platform and essentially function like an alternative password using SCS functions. Usually, Application Tokens are not based on an independent blockchain but use existing infrastructure (e.g. Ethereum). Simple Application Access Tokens without a settlement function (see sub-class (4) Application Settlement Tokens) are currently rare. An example is a Wings Token.

(4) Application Settlement Tokens

Application Settlement Tokens combine all functionalities of Application Access Tokens with the purpose of a settlement instrument. They serve as means of payment in a peer-to-peer transaction that takes place within specific business applications or platforms. An example of an Application Settlement Tokens are Siacoins, Filecoins and Mysterium.

BCP Class 2: Counterparty Tokens

The second category, BCP Class 2, refers to Tokens which include any form of a relative right against a third-party. The relative right might be a (legal) right to use the Token generator's services, a right to receive a financial payment, a right to receive an asset or a bundle of shareholder's right.

Based on the different characteristics of these relative rights, we distinguish between the following sub-classes in our BCP Class 2: (1) IOU Tokens, (2) Derivative Tokens, (3) Fund Tokens, (4) Equity Tokens, and (5) Membership Tokens.

(1) IOU Tokens

IOU Tokens represent any forms of a debt or claim against the token holder or a third party. Examples of such an underlying claim can be the:

- payment of a specific amount;
- participation in future income;
- delivery of a material or immaterial asset;
- usage right of an infrastructure; or
- right to receive services.

Typically, the details of the debt are part of a separate contract between the Token buyer and the Token generator. Examples are Tokens on the Lykke Marketplace. Moreover, all "utility tokens" outside of BCP Class 1 which include a relative right against a counterparty and do not fit within the other categories of BCP 2 are classified as IOU Tokens.

(2) Derivative Tokens

Derivative Tokens are a special form of the above-mentioned IOU Tokens. Because of their specifically regulated existence, they form a separate sub-class in our classification model. The value of the claim derives from an underlying base value, for example gold, Swiss Francs etc. An example of a Derivative Token is Modum.

(3) Fund Tokens

Fund Tokens represent shares of a collective investment fund centrally managed by a natural or legal person (if the management of the funds is decentralized, the Token might be classified as Tokens within BCP Class 3). The managed assets can be on or off a blockchain.

(4) Equity Tokens

The fourth sub-class in BCP Class 2, Equity Tokens, relate to tokenized shares and shareholders' rights.[2] The Token represents membership rights in a corporation as well as associated asset rights, such as the right to receive dividend payments.

(5) Membership Tokens

Membership Tokens represent a simple personal membership right, for example in an association or a club. In contrast to Equity Tokens, Membership Tokens are not related to shares of a corporation.

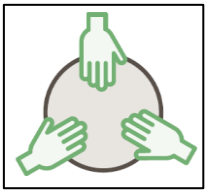
BCP Class 3: Ownership Tokens

The third category, BCP Class 3, includes cases in which the Token provides technical, SCS based ownership rights in assets. The purpose of a BCP Class 3 token is to transfer rights of associated assets by transferring the Token. These assets can include IP rights (e.g. copyright) and may also include material objects in certain jurisdictions. In contrast to BCP Class 2, BCP Class 3 Token holders do not have a claim or relative rights against a counterparty. Rather, BCP Class 3 Tokens provide absolute rights (*erga omnes*) in the form of a *right in rem* of the associated assets.

Depending on the specific ownership model, we can distinguish between (1) Joint-Ownership Tokens, (2) Co-Ownership Tokens and (3) Sole-Ownership Tokens.

[2] In Switzerland, daura AG, a joint venture project of Swisscom and MME, is currently developing the legal, technical and operational possibilities to trade shares on blockchains; see C-Share introduction video on: https://www.youtube.com/watch?v=FRCK6EEbYnY.

(1) Joint-Ownership Tokens

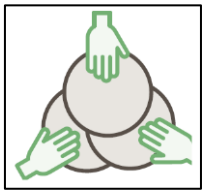


Joint Ownership Tokens relate to situations in which two or more individuals jointly own property. Each owner owns the whole asset and only the community of all owners together can dispose of the tangible or intangible property. In civil law jurisdictions, this concept of ownership in German is known as "*Gesamteigentum*".

(2) Co-Ownership Tokens

Co-Ownership Tokens provide ownership of a certain fraction, usually a percentage, of an asset. Each owner has the right to dispose individually his or her specific property fraction. In civil law jurisdictions, this fractional ownership model in German is known as "*Miteigentum*".

(3) Sole-Ownership Tokens



Sole-Ownership Tokens refer to situations in which the assets linked to the Tokens are divisible and separable. In this case, every Token holder is the sole owner of a specific asset. The sole ownership is referred to in German as "*Alleineigentum*".

Functional BCP Classification Overview

BCP Class	1 - Native Utility Tokens No legal counterparty (decentralized ecosystem)				2 - Counterparty Tokens Natural/legal person as counterparty (relative right)					3 - Ownership Tokens Right in rem (absolute right)		
BCP Sub-Class	**Basic Tokens** 	**Infra-structure Access Tokens** 	**Application Access Tokens** 	**Application Settlement Tokens** 	**IOU Tokens** 	**Derivative Tokens** 	**Fund Tokens** 	**Equity Tokens** 	**Membership Tokens** 	**Joint-Ownership Tokens** 	**Co-Ownership Tokens** 	**Sole-Ownership Tokens** 
FINMA Equivalent	Payment Tokens	Payment and/or Utility Tokens			Payment, Utility and/or Asset Token	Asset Tokens			n/a	n/a		
Functionalities	Medium of exchange, unit of account and store of value providing access to an underlying technology (1)	(1) Access to enhanced functionality infrastructure, i.e. SCS or burning mechanisms, without legal claim against a counterparty	(1) Access to decentralized application or platform without legal claim against a counterparty (2)	(1) (2) Use as P2P settlement instrument on an application / platform	(1) Tokenization of a claim against a legal counterparty (e.g. right to receive funds, services or use infrastructure)	(1) Tokenization of a claim Value derives from an underlying on- or off-chain base value	(1) Tokenization of a fund share	(1) Tokenization of a corporate membership Equity related shareholder's and financial rights	(1) Tokenization of a personal membership	(1) Joint-ownership of an asset, i.e. IP	(1) Co-ownership of an asset, i.e. IP	(1) Sole-ownership of an asset, i.e. IP
Underlying Value	None	None	None	None	Debt / Claim	Derivative (debt)	Fund share	Equity share	Personal membership right	Ownership of an asset	Ownership of an asset	Ownership of an asset
Examples	Bitcoin, Bitcoin Cash, Litecoin, Monero, ZCash	Ether, Ether Classic, Cardano, Lisk, ICON, EOS	Wings	Siacoins, Mysterium, Filecoin	Lykke Colored Coins, "Utility Tokens" with counterparty	Modum	Blockchain Capital	Daura C-Shares	tba	tba	tba	tba

BCP Development Stages

Functionality is the basis for the BCP classification introduced above. Therefore, all three BCP Classes refer to functional tokens. However, many Tokens will not be functional from the moment a contribution is made in the context of a Token Generating Event ("TGE"), also known as an Initial Coin Offering ("ICO"). In some cases, early investors may be granted a right to receive a future BCP. In order to provide greater transparency into the rights and obligations generated at various stages of a Token's creation, distribution or exchange, this analysis adds three development stages to the BCP Framework which defines the various development layers and maturities of the related protocol, application, business or projects associated with a BCP.

The following stages have been identified:

(1) Pre-BCP

The first development stage refers to situations in which contributions are recorded centrally by a legal entity or decentrally on a blockchain, but do not result in the receipt of a Token. A contribution can be registered within a protocol or any other distributed or centrally managed ledger entry but is not transferable. For example, a project team could save all contributor addresses and future application wallets on the Bitcoin Blockchain or within an Ethereum SCS and undertake to allocate future tokens accordingly. At this stage, a contributor has no transferable assets on a distributed ledger. He can only transfer the wallet data bilaterally and off-chain. Therefore, the ledger entry for a proposed future Token allocation does not fulfil the transferability requirement of our BCP definition. The same applies to constellations in which a contributor receives a passphrase allowing him to access future BCPs.

(2) Pre-Operational BCP

Tokens which are transferable via a protocol, but cannot yet offer their intended utility on the network are categorized as "pre-operational" Tokens. Such Tokens are often listed and traded on a secondary market exchanges. Within this category, we distinguish between BCP Voucher Tokens, which need to be converted into separate Tokens, and pre-operational Tokens, which requires a completion of the underlying protocol, the infrastructure and/or the application.

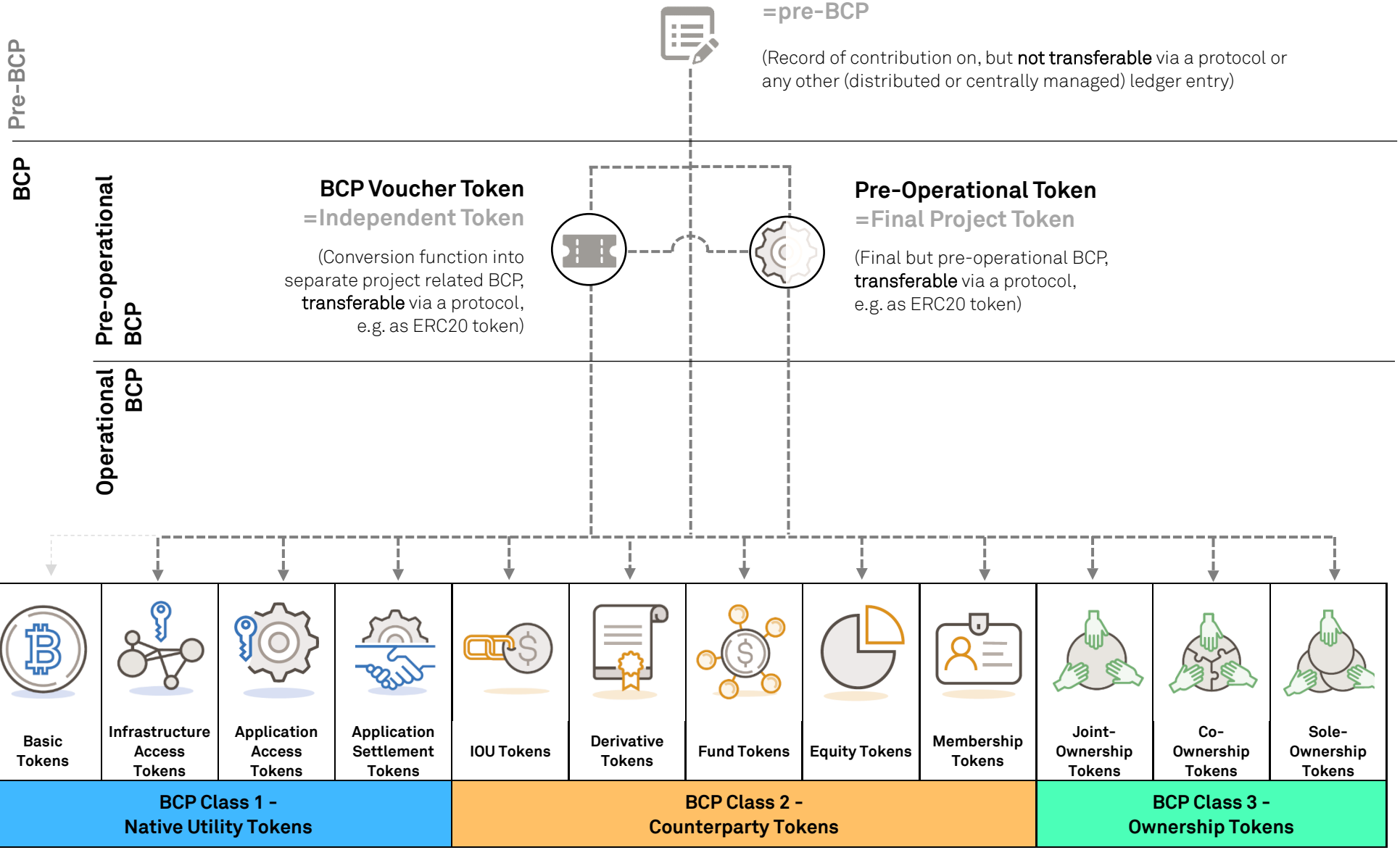
Pre-operational Tokens fulfil the definition of BCP (i.e. the transferability) but lack the intended target utility.

(3) Operational BCP

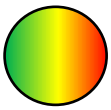
This stage refers to BCPs which operate in accordance with the intended design.

Operational BCP can be classified into the BCP classes 1 to 3 and its specific sub-classes.

BCP Development Stages Overview



Risk Assessment



Functionality & Protocol Risks

Storage & Access of Private Key Risks

Regulation & Money Laundering Risks

Market-Related & Counterparty Risks

Risk Extent
Risk Probability
Net Risk

Weighting of
Risk Factors

Risk Category
A, B, C, D and E

The categorization of BCP in risk classes depends on the technical, legal and market risks associated with the specific BCP.

Protocol Risks (Underlying Technology)

Risk of Security Weaknesses of the Underlying Technology: The BCP relies on open-source software with the inherent risk that a developer or other third parties may insert weaknesses or bugs into the underlying technology, causing the system to lose BCP that is registered on the public ledger.

Risk of Weaknesses or Exploitable Breakthroughs in the Field of Cryptography: The development of cryptography is continuing. Code cracking or technical advances such as the development of quantum computers, could present risks to cryptocurrencies and the BCP, which may result in the theft or loss of BCP.

Risk of Underlying Technology Attacks: The underlying technology used for the BCP may be susceptible to various and different network attacks, including but not limited to denial of service attacks and race condition attacks. Any successful attacks present a risk for BCP transactions, i.e. the proper execution and sequencing.

Risk of Blockchain Consensus Attacks: The user must understand and accept that, as with other public blockchain-based systems that rely on independent validators, the underlying technology may be susceptible to consensus attacks, including but not limited to, double-spending, majority voting power and censorship attacks. Any successful attack presents a risk to the BCP, expected proper execution and sequencing of BCP transactions.

Storage, Access of Private Key (PIK) Risks

Wallet System Risk: The BCP may be accessed by a wallet provider with one or several PIK stored in its storage system. Certain PIK may also be stored by accredited service providers (e.g. a bank) to facilitate transfers. Users in such cases will not be granted any access to the PIK. Moreover, the user must be aware that the value represented by the BCP is stored on a public ledger, which is neither the property nor under the control of a specific legal person or user of the wallet.

Cyber Security Risk: Cyber security risk is defined as the risk of financial loss, disruption of business activities or reputational damage resulting from absent or insufficient protection safeguarding information technology systems (e.g. hacker attack, virus transmission and network downtime), poor change management practices or leakage of information. Investors and users are the most exposed to risks of losing funds by investing, storing, managing or transferring cryptographic tokens. Organizations must ensure they provide investors and users with the best tools and security protocols to protect them from theft, malfunctions, and technical incompetence.

Risk of Insufficient User Wallet Encryption: User wallets should be encrypted with a strong password (a minimum of 12 characters, containing alphanumeric, special characters such as uppercase letters, spaces or symbols). A standard and well tested encryption algorithm should be used.

Risk of Insufficient User Wallet Backups: Users should be able to download an encrypted backup of their keys.

Risk of Insufficient Contingency Tools: Users should not lose access to funds due to software malfunctioning. Users should contemplate potential network congestion.

Regulation and Money Laundering Risks

Regulatory Risks: Blockchain technologies have been the subject of regulatory scrutiny by various regulatory bodies around the globe. Regulatory risks vary depending on the Token generating structure, mechanisms and classification. The generating and holding of BCP may impact regulatory inquiries or regulatory action, which could impede or limit the ability to hold BCP and/or to generate BCP.

Money Laundering Risks: Where a Token Generating Event accepts and generates assets within the same infrastructure (e.g. ETH – ETH), the buyer's PUK can easily be traced and screened. Conversely, money laundering risks are more likely to be present where Fiat currency is accepted in the initial Token generation without an AML and Know Your Customer ("KYC") pre-screening of the buyer, or when a Token is exchanged for another from a different infrastructure in the issuing processes, reducing the visibility of the original PUK.

Following the initial Token generation, funds raised by a corporation may be misappropriated by individuals or groups where there are insufficient controls. Alternative business models that provide strong governance, such as that of a Foundation, significantly reduces the risk of money laundering by ensuring independent audits and disclosure to authorities of fund management.

Finally, in daily trading, while the anonymity of the BCP sender's true identity carries inherent risks for money laundering abuse (the individual may be black-listed), the transaction history visible in a pseudonymous system, such as Bitcoin or Ethereum, allows the recipient to complete a KYC/AML screening of the entire history of the asset's transfers.

Market-Related and Counterparty Risks

General Market Risks: Several market-related risks must be evaluated when issuing blockchain-based products. Besides the market liquidity, market size/cap and listings on crypto exchanges, the potential collusion of operators ("Operators"), market manipulation and challenges regarding market surveillance must also be addressed.

Risk of Value Decrease of BCP: Market conversion rate of BCP may change significantly between the time of the user's instructions and the time of conversion. Hence, there is a risk of untimely execution.

Operator Counterparty Risk: As all functions of the Operators are not yet regulated, no self-regulating schemes exists and market prices remain volatile (see above), there is an increased operator (counterparty) risk. In particular, an operator would not be in the position to execute a transaction due to organizational, financial and/or regulatory restraints.

Risk of Alternative (Hard-Forked) Underlying Technologies: Alternative underlying technologies that uses the same open-source code and open-source protocol as the BCP could be established. The official underlying technology may compete with these alternative networks, which could potentially negatively impact the value of the BCP.

Summarized Assessment Result

Functional & Legal Perspective

Investor's Perspective

The final stage of a BCP assessment combines the BCP Class, which considers technical aspects, value and the presence of counterparties, together with the BCP Risk Category, based on security, legal and market considerations. The resulting BCP rating is therefore derived from a standard and holistic assessment of the BCP that aims to provide visibility to regulators and protection to investors, ultimately leading to higher trust and adoption of blockchain technologies.

Annex 1: Regulatory Qualification in Switzerland

FINMA ICO Guidelines of February 16, 2018

The Swiss Financial Market Supervisory Authority FINMA has published guidelines ("Guidelines"), dated February 16, 2018, setting out how it intends to apply financial market legislations in handling enquiries regarding the applicable regulatory framework for initial coin offerings ("ICO"). The Guidelines complement FINMA's earlier Guidance 04/2017, published on September 29, 2017.

By issuing the Guidelines, FINMA takes an important step forward to further clarify the applicability of the current legal and regulatory framework related to the organisation of ICOs or Token Generating Events ("TGE") in Switzerland. In doing so, FINMA becomes the first global regulator to provide detailed and principle based rules on how it intends to treat enquiries from ICO organisers.

FINMA's Guidelines recognise the innovative potential of blockchain technology by creating a positive and (lightly) regulated environment for this highly dynamic market. By means of this most recent Guideline, FINMA informs ICO organisers the information that is required in order to submit enquiries, it allows FINMA to respond more effectively, and of greater importance, it clarifies the principles on which FINMA will base its response to such enquiries or ruling requests.

Although the Guidelines aim to provide high-level guidance, they also leave a degree of ambiguity in relation to a number of legal questions. The Guidelines provide a general framework as to how FINMA currently interprets the regulatory landscape, however in our view, many market participants may nevertheless require further clarification on the regulatory treatment of their Tokens or ICO, obtained by means of a non-action letter. Furthermore, the Guidelines do not go into depth the detailed reasoning behind FINMA's legal analysis. It therefore remains to be seen to what extent future case law and further regulations will continue to support FINMA's approach as the technology and markets matures. Finally, the Guidelines focuses largely on traditional issuers and investor relationships, they do not take into account aspects of decentralized funding models, community-based projects and open-source software developments.

FINMA distinguishes between Payment Tokens, Utility Tokens and Asset Tokens:

(1) FINMA Payment Tokens

Payment tokens (synonymous with cryptocurrencies) are tokens which are intended to be used, now or in the future, as a means of payment for acquiring goods or services or as a means of money or value transfer. Cryptocurrencies give rise to no claims on their issuer.

(2) FINMA Utility Tokens

Utility tokens are tokens which are intended to provide access digitally to an application or service by means of a blockchain-based infrastructure.

(3) FINMA Asset Tokens

Asset tokens represent assets such as a debt or equity claim on the issuer. Asset tokens promise, for example, a share in future company earnings or future capital flows. In terms of their economic function, therefore, these tokens are analogous to equities, bonds or derivatives. Tokens which enable physical assets to be traded on the blockchain also fall into this category.

Relationship between BCP and FINMA Classification

FINMA remains more or less in line with frameworks discussed by leading practitioners, including the current Blockchain Crypto Property Classification model ("BCP") at hand, however in a simplified version by grouping all token forms into three categories without any sub-categories. Both the BCP and FINMA models are based on the functionality of specific Tokens. However, FINMA points out that the individual token classifications are not mutually exclusive and hybrid Tokens are possible. The absence of a precise classification leads to some degree of legal uncertainty in practice. Moreover, the qualification of Tokens for decentralized, open-sourced and community-based projects, which do not need a centralized issuer, seems to be out of scope in the FINMA model.

The aim of the Blockchain Crypto Property Classification 2.0, which is based on 3 BCP Classes and 12 BCP Sub-Classes, is to enhance the existing framework for Token classification approach and complement the high-level FINMA model in order to simplify the legal, risk and regulatory evaluation.

Taxation

Taxation issues have - rightfully - not been addressed by FINMA as part of the by Guidelines. Nevertheless, while regulatory discussions are of highest relevance, taxation question are vital to the same extent. Luckily, the Swiss tax system is generally very beneficial for corporate structures, offering effective income tax rates between 8 - 24%, depending on business activity and location.

Blockchain-based crowdfunding, however, is still in its infancy in Switzerland. Although the individual forms of funding are essentially nothing new under civil law, many uncertainties remain under tax law. The difficulty of crowdfunding is that the tax implications differ widely, depending on the form it takes. While for equity and debt-based structures, transactional taxes like stamp duties and withholding taxes are of major relevance, income tax exemption or gift tax must be considered for donation-based models. In addition, reward-based crowdfunding could be subject to VAT. Moreover, countless combinations (including profit participating loans, reclassification of debt as equity, mixed donations, and so forth) and cross-border issues are possible, which further complicates matters.

Therefore, no general comments about specific tax consequences of ICOs can be made. Only a case by case analysis may identify the exact circumstances and particularities of a specific project. Furthermore, this would enable the tax implications to be discussed with the relevant authorities ahead of time, in order to avoid any unpleasant surprises down the road that could jeopardise the very existence of the project.

However, the Swiss tax authorities are generally very progressive with regard to blockchain-based technologies such as cryptocurrencies, tokens and ICOs. Responding to the formal request of some Swiss bitcoin organizations in 2015, the Swiss Federal Tax Administration (SFTA) confirmed that for the purpose of Swiss VAT it would treat Bitcoin the same way as the Swiss Franc or other FIAT currencies, i.e. trading in Bitcoins is neither a delivery, nor a service, but rather a means of payment and as a result, not subject to VAT. Recently, the SFTA has mentioned orally that all BCP Class 1 Tokens (i.e. tokens with no claim towards a legal counterparty) would receive the same VAT treatment.

In addition, the SFTA has published an "official" exchange rate for Bitcoin since December 31, 2015. This exchange rate is a recommendation to the cantonal tax authorities for net wealth tax purposes. In 2017, the SFTA added nine additional cryptocurrencies - Ethereum, Ripple, Bitcoin Cash, Litecoin, Cardano, NEM, Stellar, IOTA and TRON - to their exchange list, which is unprecedented in the rest of Europe or the US.

Regulatory Implications of BCP Classification in Switzerland 🇨🇭 Primary Market

BCP Class	1 - Native Utility Tokens No legal counterparty (decentralized ecosystem)				2 - Counterparty Tokens Natural/legal person as counterparty (relative right)					3 - Ownership Tokens Right in rem (absolute right)		
BCP Sub-Class	**Basic Tokens**	**Infra-structure Access Tokens**	**Application Access Tokens**	**Application Settlement Tokens**	**IOU Tokens**	**Derivative Tokens**	**Fund Tokens**	**Equity Tokens**	**Membership Tokens**	**Joint-Ownership Tokens**	**Co-Ownership Tokens**	**Sole-Ownership Tokens**
FINMA Equivalent	Payment Tokens	Payment and/or Utility Tokens			Payment, Utility and/or Asset Token	Asset Tokens			n/a	n/a		

Primary Market
direct and centralized issuance via TGE/ICO

Swiss license requirement for direct primary market issuance (TGE/ICO) of Tokens?						
No			Only if issuer qualifies as derivative house	No		
Anti-money-laundering provisions: Self-regulatory-organisation (SRO) membership or a directly subordinated financial intermediaries (DSFIs) approval required?						
Mandatory, if issuer carries out a professional activity as a financial intermediary and if either (1) Token qualifies as means of payment for acquiring goods and services or means of money or value transfer or (2) if the main reason of the Token is to provide access rights to a financial application			In general, not applicable			
Regulatory prospectus required and to be approved by FINMA?						
No			If qualified as structured product	Yes	In general, no	
Civil law prospectus required (without regulatory approval)?						
No	If qualified as bond obligation (incl. convertible and warrant bonds)		Depends on specific case		Yes	In general, no
Taxation of primary market issuance?						
Contributions / sales price might be subject to business profit tax; tax-neutral if contributed to the committed assets of a foundation or if corresponding liability must be booked; value added tax (VAT) depending on circumstances					Stamp duty of 1% if > CHF 1 Mio.	Tax-neutral if association membership	Sales price might be subject to business profit tax; value added tax (VAT) of 7.7% depending on associated asset

Regulatory Implications of BCP Classification in Switzerland Secondary Market

BCP Class	1 - Native Utility Tokens No legal counterparty (decentralized ecosystem)				2 - Counterparty Tokens Natural/legal person as counterparty (relative right)					3 - Ownership Tokens Right in rem (absolute right)		
BCP Sub-Class	**Basic Tokens**	**Infra-structure Access Tokens**	**Application Access Tokens**	**Application Settlement Tokens**	**IOU Tokens**	**Derivative Tokens**	**Fund Tokens**	**Equity Tokens**	**Membership Tokens**	**Joint-Ownership Tokens**	**Co-Ownership Tokens**	**Sole-Ownership Tokens**
FINMA Equivalent	Payment Tokens	Payment and/or Utility Tokens			Payment, Utility and/or Asset Token	Asset Tokens			n/a	n/a		

Secondary Market
Intermediated transfer

Swiss regulatory license requirement for Swiss-based exchanges trading Functional Tokens?					
In general, no (BCP Class 1 refers to Tokens with no relative right against a legal counterparty)		Depends on specific case	In general, yes (if: (1) relative right, (2) suitable for mass trading, and (3) fulfilling formal requirements of uncertificated security)		Depends on specific case
Swiss regulatory license requirement for Swiss-based exchanges trading BCP Voucher Tokens or Pre-Functional Tokens?					
Depends on specific case (possible, if: (1) relative right, (2) suitable for mass trading, and (3) fulfilling formal requirements of uncertificated security)					
Anti-money-laundering provisions: self-regulatory-organisation (SRO) membership or a directly subordinated financial intermediaries (DSFIs) approval for exchange required?					
Yes	If qualified as "money" according to the Swiss Anti Money Laundering Act	Depends on specific case	In general, yes		In general, no
Taxation of secondary market trading (perspective of a professional trader as seller)?					
Capital gain might be subject to business profit tax; in general, no value added tax (VAT)		Capital gain might be subject to business profit tax; stamp duty of 1,5 or 3,0 ‰ might be applicable if taxable securities are traded via a Swiss securities dealer; value added tax (VAT) depending on underlying relative right		n/a	Capital gain might be subject to business profit tax; value added tax (VAT) of 7.7% depending on associated asset
Taxation of secondary market trading (perspective of a private person as seller)?					
Tax-free capital gain		Tax-free capital gain; stamp duty of 1,5 or 3,0 ‰ only applicable if taxable securities are traded via a Swiss securities dealer;		n/a	Tax-free capital gain

Annex 2: BCP Classification & Assessment of BTC

BCP Evaluation

Token Evaluation			
	Bitcoin (BTC)		Measures required
Underlying BCP Protocol			
Protocol Name	Bitcoin Blockchain		
Direct / Multilayer Token	Direct	Direct = independent BC Multilayer = based on diff. BC	
Launch	January 2009		
BC Characteristics	public & permissionless	public & permissionless	
Timestamping	Proof of Work (fixed, halving)	Proof of work / stake / hybrid	
Hash Algorithm	SHA256d	scrypt / SHA / others	
Avg. Amount of (full) Nodes	9243	min. 500	
Multisig Wallets	Yes		
Possibility of Tx Analysis	Yes		
Unit Cap	21M		
Hard Fork History	Hard forked in July 2017 (BTC – BCH) and October 2017 (BTC – BTG)		
IP rights	Open-source		
Market Capitalisation & Distribution			
Market Cap	$ 189'841'099'840 (04.03.18)	min. USD 100 Mio.	
Exchange Listings	Most major (20+)	min. 1 major	
Price High/Low (180d)	$ 19'486 (17.12.17) / $ 3'424 (15.09.17)		
In relation to BTC	1		
Historical Volatility (180d)	6.68% (per 04.03.18)		
In relation to BTC	1		
Price High/Low (30d)	$ 11'957 (20.02.18) / $ 6'149 (06.02.18)		
In relation to BTC	1		
Historical Volatility (30d)	6.91% (per 04.03.18)		
In relation to BTC	1		
Trading Volume High/Low (180d)	$ 23.5B (06.01.18) / $ 0.8B (25.09.18)		
In relation to BTC	1		
Trading Volume High/Low (30d)	$ 14.1B (06.02.18) / $ 5.7B (25.02.18)		
In relation to BTC	1		
Market Cap High/Low (180d)	$ 326.3B (17.12.17) / $ 56.7B (15.09.17)		

In relation to BTC	1	
Market Cap High/Low (30d)	$ 201.8B (20.02.18) / $ 102.9B (06.02.18)	
In relation to BTC	1	
pre-sale, pre-allocation, community allocation	Decentralised non-TGE-distribution	
Price finding mechanism, contribution cap	Decentralised non-TGE-distribution	
issuing legal structure	Decentralised non-TGE-distribution	
AML, contributor suitability compliance	Decentralised non-TGE-distribution	
Cross-border offering	Decentralised non-TGE-distribution	
After TGE governance	Decentralised non-TGE-distribution	
Distribution control	Decentralised non-TGE-distribution	
SCS/code audit	Decentralised	
Registration Function & Underlying Assets		
Registration Function	BCP account entry	
Underlying Assets ("Colored Coin")	None	
Target Use	Medium of exchange, unit of account and store of value	
	Means of payment (transaction fees) on Bitcoin blockchain	
BCP Classification		
BCP Class	**1**	
Sub-Class	**Basic Token**	

BCP Risk Assessment

Risk Assessment			Measures required
Full Source Code Screening Required?			
No	Sufficient Market Experience with Token		
General BCP 1 Risk*	Specific Risks (Deviation from General Risks)		
*Risk Definitions based on the separate "BCP Risk Assessment (BCP RA)" Risk Categories: 1 (very low risk) - 5 (very high risk)			
Functionality & Protocol Risks ("Underlying Technology")			
Risk of security weaknesses of the Underlying Technology:	Long history of stability and functionality		
	Risk Extent	3	
	Risk Probability	1	
	Net Risk	2	
Risk of weaknesses of the used cryptography:	SHA256 expected to remain secure ECDSA may be vulnerable to quantum computing attacks		
	Risk Extent	3	
	Risk Probability	2	
	Net Risk	2.5	

Risk of Underlying Technology attacks:	Long history of stability and functionality		
	Risk Extent	3	
	Risk Probability	1	
	Net Risk	2	
Risk of blockchain consensus attacks	very stable PoW consensus mechanism regional centralisation of mining in certain countries		
	Risk Extent	3	
	Risk Probability	1	
	Net Risk	2	
Storage & Access of Private Key ("PIK") Risks			
Wallet System Risk:	No deviation from general BCP 1 risk		
	Risk Extent	3	
	Risk Probability	2	
	Net Risk	2.5	
Cyber Security Risk	No deviation from general BCP 1 risk		
	Risk Extent	3	
	Risk Probability	2	
	Net Risk	2.5	
Risk of insufficient User wallet encryption:	No deviation from general BCP 1 risk		
	Risk Extent	3	
	Risk Probability	2	
	Net Risk	2.5	
Risk of insufficient User wallet backups	No deviation from general BCP 1 risk		
	Risk Extent	3	
	Risk Probability	2	
	Net Risk	2.5	
Risk of insufficient contingency tools	No deviation from general BCP 1 risk		
	Risk Extent	2	
	Risk Probability	2	
	Net Risk	2	
Regulation and Money Laundering Risks			
Regulation-Related Risks	No deviation from general BCP 1 risk		
	Risk Extent	2	
	Risk Probability	2	
	Net Risk	2	
Market-Related and Counterparty Risks			
General Market Risks	No deviation from general BCP 1 risk		
	Risk Extent	2	

		Risk Probability	2	
		Net Risk	2	
	Risk of Value Decrease of BCP	No deviation from general BCP 1 risk		
		Risk Extent	2	
		Risk Probability	2	
		Net Risk	2	
	Operator Counterparty Risk	No deviation from general BCP 1 risk		
		Risk Extent	2	
		Risk Probability	2	
		Net Risk	2	
	Risk of alternative (hard-forked) Underlying Technologies	Hard forked in July 2017, SegWit2x fork planned		
		Risk Extent	2	
		Risk Probability	3	
		Net Risk	2.5	

BCP General Risk Score

Risk:	Net Risk	Weighting (1 - 3)	Weighted Risk
Functionality & Protocol Risks ("Underlying Technology")	2.125	3	6.375
Storage & Access of Private Key ("PIK") Risks	2.4	2	4.8
Regulation and Money Laundering (ML) Risks	2	1	2
Market related risks and counter-party Risks	2.125	2	4.25
			17.425

Risk Score A: <18.5	Risk Score B: 18.5<=X< 20.5	Risk Score C: 20.5<= X<22	Risk Score D: >= 22
Risk Category:	A		

Overall BCP Classification & Rating

Bitcoin	BTC	BCP Class	1
		Sub-Class	Basic Token
		Risk Category	A
		BCP	**1 A**

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