

Descriptions of “Crypto Assets”



BITCOIN AND OTHER VIRTUAL CURRENCIES

Guidance on the Application of FinCEN’s Regulations to Persons Administering, Exchanging, or Using Virtual Currencies (FIN-2013-G001), Financial Crimes Enforcement Network (FinCEN) (March 18, 2013) at p. 1:

“FinCEN’s regulations define currency (also referred to as ‘real’ currency) as ‘the coin and paper money of the United States or of any other country that [i] is designated as legal tender and that [ii] circulates and [iii] is customarily used and accepted as a medium of exchange in the country of issuance...In contrast to real currency, ‘virtual’ currency is a medium of exchange that operates like a currency in some environments, but does not have all the attributes of real currency. In particular, virtual currency does not have legal tender status in any jurisdiction. This guidance addresses ‘convertible’ virtual currency. This type of virtual currency either has an equivalent value in real currency, or acts as a substitute for real currency.”

SEC v. Trendon T. Shavers and Bitcoin Savings and Trust, Memorandum Opinion Regarding the Court’s Subject Matter Jurisdiction filed August 6, 2013 (United States District Court for the Eastern District of Texas (Sherman Division). Case 4:13-cv-00416-RC-ALM) at pp. 1-2:

“Bitcoin is an electronic form of currency unbacked by any real asset and without specie, such as coin or precious metal. Derek A. Dion, *I’ll Gladly Trade You Two Bits on Tuesday for a Byte Today: Bitcoin, Regulating Fraud in the E-Economy of Hacker-Cash*, 2013 U. Ill. J.L. Tech & Pol’y 165, 167 (2013). ‘It is not regulated by a central bank or any other form of governmental authority; instead, the supply of Bitcoins is based on an algorithm which structures a

decentralized peer-to-peer transaction system.’ *Id.* Bitcoin was designed to reduce transaction costs, and allows users to work together to validate transactions by creating a public record of the chain of custody of each Bitcoin. *Id.* Bitcoin can be used to purchase items online, and some retail establishments have begun accepting Bitcoin in exchange for gift cards or other purchases.”

NASAA Expands Annual Top Investor Threat List, North American Securities Administrators Association (October 15, 2013) at p. 4:

“Virtual reality may exist only in science fiction, but consumers now are able to purchase goods and services with virtual money such as Bitcoin, PP Coin and other digital currencies. Unlike traditional coinage, these alternatives typically are not backed by tangible assets, are not issued by a governmental authority and are subject to little or no regulation. The value of Bitcoins and other digital currencies is highly volatile and the concept behind the currency is difficult to understand even for sophisticated financial experts given the complicated mathematical algorithms that determine when new blocks of coins will be released.”

Internal Revenue Service Notice 2014-12 (March 25, 2014) at p. 1:

“Virtual currency is a digital representation of value that functions as a medium of exchange, a unit of account, and/or a store of value. In some environments, it operates like ‘real’ currency – i.e., the coin and paper money of the United States or of any other country that is designated as legal tender, circulates, and is customarily used and accepted as a medium of exchange in the country of issuance – but it does not have legal tender status in any jurisdiction...Virtual currency that has an equivalent value in

real currency, or that acts as a substitute for real currency, is referred to as 'convertible' virtual currency. Bitcoin is one example of a convertible virtual currency. Bitcoin can be digitally traded between users and can be purchased for, or exchanged into, U.S. dollars, Euros, and other real or virtual currencies."

Informed Investor Advisory: Virtual Currency, North American Securities Administrators Association (April 29, 2014) at p. 1:

"Virtual currency is an electronic medium of exchange that, unlike real money, is not controlled or backed by a central government or central bank. Virtual currency includes crypto-currency such as Bitcoin, Ripple or Litecoin. These currencies can be bought or sold through virtual currency exchanges, used to purchase goods or services where accepted and are stored in an electronic wallet, also known as an e-Wallet.

"An e-Wallet is a digital system that allows payments online via a computer or mobile device such as a smartphone. While in some instances virtual currency has been recognized as a monetary equivalent, the Internal Revenue Service has announced that it would treat virtual currency as 'property' and not 'currency' for tax purposes.

Bitcoin: More than a Bit Risky, FINRA Investor Alert (May 7, 2014) at p. 1:

"Bitcoin was introduced in 2009 as open source software. Think of it as a sophisticated computer program that encrypts, verifies and records bitcoin transactions. While Bitcoin users are anonymous, a public record or 'block chain' is public and shared between Bitcoin system users. Mathematical proofs are used to verify the authenticity of each transaction.

"Bitcoins are created by a process called 'mining.' Like mining for gold, the process is labor intensive. Mining serves two purposes. First, miners use software algorithms to add transaction records to Bitcoin's public ledger of past transactions and verify legitimate bitcoin transactions. For their efforts, Bitcoin miners get transaction fees. In addition, if the miner finds a new 'block,' the miner is awarded new bitcoins. A finite

number of bitcoins can be mined (21 million based on the mathematics underlying Bitcoin mining).

"Bitcoins can also be bought and sold online or at physical locations. A growing number of physical establishments and exchanges allow customers to buy and sell bitcoins using cash, credit cards, money orders and other methods. Bitcoins reside in a digital 'wallet,' where they can be used to purchase items from establishments that accept bitcoins.

"Bitcoins can be traded for traditional currency at exchange rates that fluctuate. Bitcoin prices have been extremely volatile, and subject to wide price swings."

Investor Alert: Bitcoin and Other Virtual Currency-Related Investments, Securities and Exchange Commission – Office of Investor Education and Advocacy (May 7, 2014) at p. 1:

"Bitcoin has been described as a decentralized, peer-to-peer virtual currency that is used like money - it can be exchanged for traditional currencies such as the U.S. dollar, or used to purchase goods or services, usually online. Unlike traditional currencies, Bitcoin operates without central authority or banks and is not backed by any government."

Virtual Currencies – Key Definitions and Potential AML/CFT Risks, Financial Action Task Force (June, 2014) at pp.4-6; **Virtual Currencies – Guidance for a Risk-Based Approach**, Financial Action Task Force (June 2015) at pp. 26-28; see also **Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO**, Securities Exchange Act Release No. 81207 (July 25, 2017) (the "Dao Report") at p. 3, fn. 5):

VIRTUAL CURRENCY

"**Virtual currency** is a digital representation... of value that can be digitally traded and functions as (1) a medium of exchange; and/or (2) a unit of account; and/or (3) a store of value, but does not have legal tender status (i.e., when tendered to a creditor, is a valid and legal offer of payment) in any jurisdiction... It is not issued nor guaranteed by any jurisdiction, and fulfils the above functions only by

agreement within the community of users of the virtual currency. Virtual currency is distinguished from **fiat currency** (a.k.a. **'real currency,' 'real money,'** or **'national currency'**), which is the coin and paper money of a country that is designated as its legal tender; circulates; and is customarily used and accepted as a medium of exchange in the issuing country. It is distinct from e-money, which is a digital representation of fiat currency used to electronically transfer value denominated in fiat currency. E-money is a digital transfer mechanism for fiat currency—i.e., it electronically transfers value that has legal tender status.

"Digital currency can mean a digital representation of either virtual currency (non-fiat) or e-money (fiat) and thus is often used interchangeably with the term "virtual currency". In this paper to avoid confusion, only the terms 'virtual currency' or 'e-money' are used.

CONVERTIBLE VERSUS NON-CONVERTIBLE VIRTUAL CURRENCY

"This paper proposes dividing virtual currency into two basic types: convertible and non-convertible virtual currency... Although the paper uses 'non-convertible' and 'closed', and 'convertible' and 'open' as synonyms, it should be emphasised that the notion of 'convertible currency' does not in any way imply an ex officio convertibility (e.g. in the case of gold standard), but rather a de facto convertibility (e.g. because a market exists). Thus, a virtual currency is 'convertible' only as long as some private participants make offers and others accept them, since the 'convertibility' is not guaranteed at all by law.

"Convertible (or open) virtual currency has an equivalent value in real currency and can be exchanged back-and-forth for real currency... Examples include: Bitcoin; e-Gold (defunct); Liberty Reserve (defunct); Second Life Linden Dollars; and WebMoney....

"Non-convertible (or closed) virtual currency is intended to be specific to a particular virtual domain or world, such as a Massively Multiplayer Online Role-Playing Game (MMORPG) or Amazon.com, and under

the rules governing its use, cannot be exchanged for fiat currency. Examples include: Project Entropia Dollars; Q Coins; and World of Warcraft Gold.

"It should be noted that even where, under the terms set by the administrator, a non-convertible currency is officially transferrable only within a specific virtual environment and is not convertible, it is possible that an unofficial, secondary black market may arise that provides an opportunity to exchange the 'non-convertible' virtual currency for fiat currency or another virtual currency. Generally, the administrator will apply sanctions (including termination of membership and/or forfeiture of remaining virtual currency) to those seeking to create or use a secondary market, contrary to the rules of the currency...

Development of a robust secondary black market in a particular 'non-convertible' virtual currency may, as a practical matter, effectively transform it into a convertible virtual currency. A non-convertible characterisation is thus not necessarily static.

CENTRALISED VERSUS NON-CENTRALISED VIRTUAL CURRENCIES

"All non-convertible virtual currencies are centralised: by definition, they are issued by a central authority that establishes rules making them non-convertible. In contrast, convertible virtual currencies may be either of two sub-types: centralised or decentralised.

"Centralised Virtual Currencies have a single administrating authority (**administrator**) – i.e., a third party...that controls the system. An administrator issues the currency; establishes the rules for its use; maintains a central payment ledger; and has authority to redeem the currency (withdraw it from circulation). The exchange rate for a convertible virtual currency may be either **floating** – i.e., determined by market supply and demand for the virtual currency – or **pegged** – i.e., fixed by the administrator at a set value measured in fiat currency or another real-world store of value, such as gold or a basket of currencies. Currently, the vast majority of virtual currency payments transactions involve centralised virtual currencies.

Examples: E-gold (defunct); Liberty Reserve dollars/euros (defunct); Second Life ‘Linden dollars’; PerfectMoney; WebMoney ‘WM units’; and World of Warcraft gold.

“**Decentralised Virtual Currencies** (a.k.a. **cryptocurrencies**) are distributed..., open-source, math-based peer-to-peer virtual currencies that have no central administrating authority, and no central monitoring or oversight. Examples: Bitcoin; Litecoin; and Ripple.

“**Cryptocurrency** refers to a math-based, decentralised convertible virtual currency that is protected by cryptography. – i.e., it incorporates principles of cryptography to implement a distributed, decentralised, secure information economy. Cryptocurrency relies on public and private keys to transfer value from one person (individual or entity) to another, and must be cryptographically signed each time it is transferred. The safety, integrity and balance of cryptocurrency ledgers is [sic] ensured by a network of mutually distrustful parties (in Bitcoin, referred to as miners) who protect the network in exchange for the opportunity to obtain a randomly distributed fee (in Bitcoin, a small number of newly created bitcoins, called the ‘block reward’ and in some cases, also transaction fees paid by users as a [sic] incentive for miners to include their transactions in the next block). Hundreds of cryptocurrency specifications have been defined, mostly derived from Bitcoin, which uses a proof-of-work system to validate transactions and maintain the block chain. While Bitcoin provided the first fully implemented cryptocurrency protocol, there is growing interest in developing alternative, potentially more efficient proof methods, such as systems based on proof-of-stake.

“**Bitcoin**, launched in 2009, was the first decentralised convertible virtual currency, and the first cryptocurrency. Bitcoins are units of account composed of unique strings of numbers and letters that constitute units of the currency and have value only because individual users are willing to pay for them. Bitcoins are digitally traded between users with a high degree of anonymity and can be exchanged (purchased or cashed out) into US dollars, Euros, and

other fiat or virtual currencies. Anyone can download the free, open-source software from a website to send, receive, and store bitcoins and monitor Bitcoin transactions. Users can also obtain Bitcoin addresses, which function like accounts, at a Bitcoin exchanger or online wallet service. Transactions (fund flows) are publicly available in a shared transaction register and identified by the Bitcoin address, a string of letters and numbers that is not systematically linked to an individual. Therefore, Bitcoin is said to be ‘pseudo-anonymous’. Bitcoin is capped at 21 million bitcoins (but each unit could be divided in smaller parts), projected to be reached by 2140...

In the Matter of Erik T. Vorhees, Securities Act Release No. 9592 (June 3, 2014) at p. 2, fn. 1; *In the Matter of BTC Trading, Corp. and Ethan Burnside*, Securities Act Release No. 9685 (December 8, 2014) at p. 2, fn. 1; *In the Matter of Bitcoin Investment Trust and SecondMarket, Inc.*, Securities Exchange Act Release No. 78282 (July 11, 2016) at p. 2, fn. 1:

“For purposes of this Order, a ‘virtual currency’ is a digital representation of value that can be digitally traded and functions as a medium of exchange; a unit of account; and/or a store of value, but does not have legal tender status (i.e., when tendered to a creditor, is a valid and legal offer of payment) in any jurisdiction. It is not issued or guaranteed by any jurisdiction, and fulfills the above functions only by agreement within the community of users of the virtual currency. Virtual currency is distinct from fiat currency, which is the coin and paper money of a country that is designated as its legal tender; circulates; and is customarily used and accepted as a medium of exchange in the issuing country. It also is distinct from e-money, which is a digital representation of fiat currency used to electronically transfer value denominated in fiat currency, i.e., e-money electronically transfers value that has legal tender status.”

Risks to customers posed by virtual currencies, Consumer Financial Protection Bureau Consumer Advisory (August 11, 2014) at pp. 1-2:

“Virtual currencies are a kind of electronic money. That means when you buy a virtual currency you don’t get

an actual coin or bill that you can hold in your hands. Instead, you receive electronic units that many people may agree to accept and treat like dollars, euros, or other forms of money.

“But virtual currencies aren’t regular money. To begin with, virtual currencies are not issued or backed by the United States or any other government or central bank. No one is required to accept them as payment or to exchange them for traditional currencies. To work, they depend on the processing power of vast networks of unidentified, private computers around the world, which maintain and update a public ledger called the ‘blockchain.’ (Think of it as a public spreadsheet.)

“Further, virtual currencies are not kept in banks or credit unions. In order to use virtual currencies, you need to store them in a ‘digital wallet,’ which are identified by your ‘public keys.’ To access the virtual currency in your digital wallet, you use ‘private keys.’ (Your private keys are random sequences of 64 letters and numbers that should be kept secret; your public keys are corresponding letter/number sequences that everyone can see on the blockchain.) If you want to send someone your virtual currency, for example as payment, you use the private keys to unlock your digital wallet.

“In many ways, your private keys are your virtual currency so keeping your private keys secret is critical to owning and using virtual currency. You can store and protect your private keys yourself or entrust them to a company called a wallet provider to protect them for you.”

CFPB Warns Consumers About Bitcoin, Consumer Financial Protection Bureau Press Release (August 11, 2014) at p. 1:

“Virtual currencies are designed to be an alternative to current payment systems. Better-known virtual currencies include Bitcoin, XRP, and Dogecoin. Often referred to in the industry as ‘digital currencies,’ they are a way for people to track, store, and send payments over the Internet, and they may have the

potential to make payment processing cheaper or faster. But they are not backed by any government or central bank. In addition, because virtual currency accounts are not insured by the Federal Deposit Insurance Corporation or the National Credit Union Share Insurance Fund, if a virtual currency company fails – and many have – the government will not cover the loss.”

United States of America v. Trendon T. Shavers, a/k/a “pirateat40,” Complaint filed November 3, 2014 (United States District Court for the Southern District of New York, Case 1:15-cr-00157-LAK) at pp. 3-4:

“a. Bitcoin are a decentralized form of electronic currency, existing entirely on the Internet and not in any physical form. The currency is not issued by any government, bank, or company, but rather is generated and controlled automatically through computer software operating on a ‘peer-to-peer’ network. Bitcoin transactions are processed collectively by the software-enabled computers composing the network.

b. To acquire Bitcoin in the first instance, a user typically must purchase them from a Bitcoin ‘exchanger.’ In return for a commission, Bitcoin exchangers accept payments of currency in some conventional form (cash, wire transfer, or the like) and exchange the money for a corresponding number of Bitcoin, based on a fluctuating exchange rate. Exchangers also accept payments of Bitcoin and exchange the Bitcoin back for conventional currency, again, charging a commission for the service.

“c. Once a user acquires Bitcoin from an exchanger, the Bitcoin are kept in a ‘wallet’ associated with a Bitcoin ‘address,’ designated by a complex string of letters and numbers. (The ‘address’ is analogous to the account number for a bank account, while the ‘wallet’ is analogous to a bank safe where the money in the account is physically stored.) Once a Bitcoin user funds his wallet, the user can then use Bitcoin in the wallet to conduct financial transactions over the Internet by transferring Bitcoin from his Bitcoin address to the Bitcoin address of another user.

“d. All Bitcoin transactions are recorded on a public ledger known as the ‘Blockchain,’ which is stored on the peer-to-peer network on which the Bitcoin system operates. The Blockchain serves, among other purposes, to prevent a user from spending the same Bitcoin more than once. However, the Blockchain reflects only the movement of funds between anonymous Bitcoin addresses and, therefore, cannot by itself be used to determine the identities of the persons involved in the transactions. Only if one knows the identities associated with each Bitcoin address involved in a set of transactions is it possible to meaningfully trace funds through the system.

“e. Bitcoin are not illegal in and of themselves and have legitimate uses.”

Securities and Exchange Commission v. Homero Joshua Garza, GAW Miners, LLC, and ZenMiner, LLC (d/b/a ZenCloud), Complaint filed December 1, 2015 (United States District Court for the District of Connecticut, Case 3:15-cv-01760) at pp. 5-6:

“‘Virtual currency’ is a digital representation of value that can be traded and functions as a medium of exchange; a unit of account; and/or a store of value, but does not have legal tender status (i.e., when tendered to a creditor, is a valid and legal offer of payment) in any jurisdiction. Virtual currency generally is not issued or guaranteed by any jurisdiction or government, and its value is decided by consensus within the community of users of the virtual currency. The most widely adopted virtual currency is bitcoin, although there are many other virtual currencies used today, known as ‘altcoins.’ Virtual currency is distinct from fiat currency, which is the money designated by a country as its legal tender. An example of fiat currency is the United States dollar. Virtual currencies may be traded on online exchanges for fiat currencies, including the United States dollar, or used to purchase goods and services.”

A CFTC Primer on Virtual Currencies, Commodity Futures Trading Commission (October 17, 2017) at p. 4; ***Backgrounder on Self-Certified Contracts for Bitcoin Products***, Commodity Futures Trading Commission (December 1, 2017) at p. 2

“Although precise definitions offered by others are varied, an IRS definition provides us with a general idea:

- “Virtual currency is a digital representation of value that functions as a medium of exchange, **a unit of account, and/or a store of value.**
- “In some environments, it operates like ‘real’ currency . . . but it **does not have legal tender status** [in the U.S.].
- “Virtual currency that has an equivalent value in real currency, or that acts as a substitute for real currency, is referred to as ‘convertible’ virtual currency. **Bitcoin is one example of a convertible virtual currency.**
- “Bitcoin can be digitally traded between users and can be purchased for, or exchanged into, U.S. dollars, Euros, and other real or virtual currencies.†

“IRS Notice 2014-21, available at <https://www.irs.gov/businesses/small-businesses-self-employed/virtual-currencies> (emphasis added). Please note that this definition is not a statement of the Commission’s view, and is instead offered as an aid to enhance public understanding of virtual currencies. We further note that one prominent type of virtual currency is cryptocurrency. Cryptocurrency has been described as ‘an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party.’ Satoshi Nakamoto, Bitcoin: A Peer-to-Peer Electronic Cash System (Oct. 31, 2008), available at <https://bitcoin.org/bitcoin.pdf>.”

Bitcoin Basics: 9 Things You Should Know About the Digital Currency, Financial Industry Regulatory Authority, Inc. (May 24, 2017) at pp. 1-2:

“Bitcoin is what’s known as a cryptocurrency - a digital currency secured through cryptography, or codes that can’t be read without a key...Unlike traditional cash, bitcoin supply is not controlled by any central government. Rather an algorithm developed by bitcoin’s founder...determines how many bitcoins are

produced and added to the world economy every year...It's an algorithmic money supply rule, which is much different than a fiat currency, where it's up to the central bank to determine how much to print...Bitcoin... may be attractive to individuals who don't trust the central bank of their resident country to manage the national currency...Without blockchain technology, there would be no bitcoin. Many would argue, in fact, that when it comes to the world of finance, blockchain technology is **more** important and disruptive than bitcoin. So what is public blockchain technology? It's a distributed ledger - a database of all transactions that is decentralized and immutable. In other words, while anyone can download and see the database, no one person can dive into it and rewrite its history for nefarious purposes. Transactions, for instance, will never suddenly disappear, though the coins can be stolen...You can only add to it, you can't edit it... The reason the tech is called blockchain...is because transactions are grouped in blocks and then 'chained' together through cryptographic links...If you break any of the individual components, it's immediately detected and the correct block is substituted in...The system helped solve a problem that plagued early cryptocurrencies - people spending the same money more than once..."

Investor Bulletin: Initial Coin Offerings, Securities and Exchange Commission – Office of Investor Education and Advocacy (July 25, 2017) at p. 2:

"A virtual currency is a digital representation of value that can be digitally traded and functions as a medium of exchange, unit of account, or store of value. Virtual tokens or coins may represent other rights as well. Accordingly, in certain cases, the tokens or coins will be securities and may not be lawfully sold without registration with the SEC or pursuant to an exemption from registration..."

"Virtual tokens or coins may be issued by a virtual organization or other capital raising entity. A virtual organization is an organization embodied in computer code and executed on a distributed ledger or blockchain. The code, often called a 'smart contract,' serves to automate certain functions of the organization, which may include the issuance of certain virtual coins or tokens."

CFTC v. Gelfman Blueprint, Inc., and Nicholas Gelfman, Complaint filed September 21, 2017 (United States District Court for the Southern District of New York, Case No. 1:17-cv-07181) at p. 4, fn. 1:

"For purposes of this Complaint, a virtual currency means a digital representation of value that functions as a medium of exchange, a unit of account, and/or a store of value, but does not have legal tender status in any jurisdiction. Bitcoin and other virtual currencies are distinct from 'real' currencies, which are the coin and paper money of the United States or another country that are designated as legal tender, circulate, and are customarily used and accepted as a medium of exchange in the country of issuance."

A CFTC Primer on Virtual Currencies, Commodity Futures Trading Commission (October 17, 2017) at p. 5:

"Bitcoin:

- Is 'pseudonymous' (or partially anonymous) in that an individual is identified by an
- alpha-numeric public key/address;
- Relies on cryptography (and unique digital signatures) for security based on public and private keys and complex mathematical algorithms;
- Runs on a decentralized peer-to-peer network of computers and 'miners' that operate on open-source software and do 'work' to validate and irrevocably log transactions on a permanent public distributed ledger visible to the entire network;
- Solves the lack of trust between participants who may be strangers to each other on a public ledger through the transaction validation work noted in the sub-bullet above; and
- Enables the transfer of ownership without the need for a trusted, central intermediary.

In the Matter of Coinflip, Inc., d/b/a Derivabit, and Francisco Riordan, CFTC Docket No. 15-29 (September 17, 2015) at p. 2, fn. 2:

“Bitcoin is a ‘virtual currency,’ defined here as a digital representation of value that functions as a medium of exchange, a unit of account, and/or a store of value, but does not have legal tender status in any jurisdiction. Bitcoin and other virtual currencies are distinct from ‘real’ currencies, which are the coin and paper money of the United States or another country that are designated as legal tender, circulate, and are customarily used and accepted as a medium of exchange in the country of issuance.”

Customer Advisory: Understand the Risks of Virtual Currency, Commodity Futures Trading Commission (December 15, 2017) at p. 1:

“Virtual currency is a digital representation of value that functions as a medium of exchange, a unit of account, or a store of value, but it does not have legal tender status. Virtual currencies are sometimes exchanged for U.S. dollars or other currencies around the world, but they are not currently backed nor supported by any government or central bank. Their value is completely derived by market forces of supply and demand, and they are more volatile than traditional fiat currencies.”

Proposed Interpretation Regarding Retail Commodity Transactions Involving Virtual Currency, Commodity Futures Trading Commission Release RIN 3038-AE62, 82 Fed. Reg. 60335 (December 20, 2017) at p. 60338 and fns. 46 and 47:

“The Commission interprets the term virtual currency broadly. In the context of this interpretation, virtual or digital currency:... Encompasses any digital representation of value (a “digital asset”) that functions as a medium of exchange, and any other digital unit of account that is used as a form of a currency (i.e., transferred from one party to another as a medium of exchange); may be manifested through units, tokens, or coins, among other things; and may be distributed by way of digital ‘smart contracts,’ among other Structures...However, the Commission notes that it does not intend to create a bright line definition at this time given the evolving nature of the commodity and, in some instances, its underlying public distributed

ledger technology (‘DLT’ or ‘blockchain’)...

“The Commission uses the term [sic] ‘virtual currency’ and ‘digital currency’ interchangeably for purposes of this proposed interpretation. However, the Commission acknowledges that the two terms may have certain practical differences in other contexts. For example, one view is that ‘digital currency’ includes fiat currencies, while ‘virtual currency’ does not. See The Financial Action Task Force [FATF], *Virtual Currencies: Key Definitions and Potential AML/CFT Risks*, at 4 (June 27, 2014), <http://www.fatf-gafi.org/media/fatf/documents/reports/Virtual-currency-keydefinitions-and-potential-aml-cft-risks.pdf>...

“One prominent type of virtual currency is cryptocurrency. Cryptocurrency is described as ‘an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party.’ Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System* (Oct. 31, 2008), <https://bitcoin.org/bitcoin.pdf>. Transactions are represented by a hash or ‘chain of digital signatures,’ which takes into account the previous owner and the next owner. Given the lack of a centralized authority, transaction verification is ‘publicly announced’ in a transparent ledger ‘system for participants to agree on a single history’ of transactions. *Id.* Each transaction moves from one digital wallet to another, recognized as ‘nodes’ on a distributed ledger network. This structure represents one form of DLT or blockchain technology, which underlies bitcoin—a widely traded virtual currency.”

NASAA Reminds Investors to Approach Currencies, Initial Coin Offerings and Other Cryptocurrency-Related Investments with Caution, North American Securities Administrators Association (January 4, 2018) at p. 1:

“Cryptocurrencies are a medium of exchange that are created and stored electronically in the blockchain, a distributed public database that keeps a permanent record of digital transactions. Current common cryptocurrencies include Bitcoin, Ethereum and Litecoin. Unlike traditional currency, these alternatives

have no physical form and typically are not backed by tangible assets. They are not insured or controlled by a central bank or other governmental authority, cannot always be exchanged for other commodities, and are subject to little or no regulation.”

CFTC v. Patrick K. McDonnell and CabbageTech Corp. d/b/a Coin Drop Markets, Complaint filed in the United States District Court for the Eastern District of New York, Case 1:18-cv-00361 (January 18, 2018) at p. 3:

“A virtual currency is defined here as a digital representation of value that functions as a medium of exchange, a unit of account, and/or a store of value, but does not have legal tender status in any jurisdiction. Bitcoin, Litecoin, and other virtual currencies are distinct from ‘real’ currencies, which are the coin and paper money of the United States or another country that are designated as legal tender, circulate, and are customarily used and accepted as a medium of exchange in the country of issuance.”

Informed Investor Advisory: Cryptocurrencies, North American Securities Administrators Association (April 13, 2018) at p. 1:

“Cryptocurrencies are digital assets created by companies or individuals that take the form of a virtual coin or token. Anyone can create a cryptocurrency. Cryptocurrencies are intangible and exist only on the internet. Central banks and other governmental authorities do not insure or control cryptocurrencies. You cannot always exchange them for other fiat currencies (i.e., currencies declared ‘legal tender’ by governments), such as the U.S. or Canadian dollar or Mexican peso.”

CFTC v. My Big Coin Pay, Inc., My Big Coin, Inc., Randall Crater, Mark Gillespie, John Roche and Michael Kruger, Amended Complaint filed in the United States District Court for the District of Massachusetts, Case No. 1:18-cv-10077 (April 20, 2018) at pp. 6-7:

“For the purposes of this Complaint, a virtual currency means a digital representation of value that functions as a medium of exchange, a unit of account, and/or a store of value, but does not have legal tender

status in any jurisdiction. Virtual currencies are distinct from ‘real’ currencies, which are the coin and paper money of the United States or another country that are designated as legal tender, circulate, and are customarily used and accepted as a medium of exchange in the country of issuance. Virtual currencies typically use cryptographic protocols to secure transactions in that asset and use decentralized networks to track transactions between persons who are denominated only by publicly visible strings of characters. The transactions are captured in single blocks at a time, which independent operators (called ‘miners,’ a virtual analogy to actual miners whose efforts unearth gold, silver, and other precious metals) confirm by performing algorithmic proofs of work and for which they are usually awarded a sum of the virtual currency in question. The public nature of the decentralized ledger allows people to recognize the transfer of virtual currency from one user to another without requiring any central intermediary in which both users need to trust.”

Advisory with respect to Virtual Currency Derivative Product Listings, Commodity Futures Trading Commission Staff Advisory No. 18-14 (May 21, 2018) at p. 2 and fn. 4:

“The Commission interprets the term “virtual currency” broadly, to encompass any digital representation of value that functions as a medium of exchange and any other digital unit of account used as a form of currency*... Virtual currencies may be manifested through units, tokens, or coins, but do not have legal tender status. Virtual currency transactions are generally validated and logged through a network of computers on a distributed ledger, commonly known as a blockchain.

“*See Retail Commodity Transactions Involving Virtual Currency, 82 Fed. Reg. 60,335, 60,338 (proposed Dec. 20, 2017) (noting that the Commission “does not intend to create a bright line definition at this time given the evolving nature of the commodity”). This interpretation of the term “virtual currency” is similar to one set out by the Internal Revenue Service. See IRS Notice 2014-21, <https://www.irs.gov/pub/irs-drop/n-14-21.pdf>.”

The Alert Investor: Getting a Handle on Virtual Currencies, Financial Industry Regulatory Authority, Inc. and BBB Institute (May 31, 2018) at pp. 1-2:

“According to the Commodity Futures Trading Commission, virtual currencies are ‘a digital representation of value that functions as a medium of exchange, a unit of account and/or a store of value.’ In other words, each currency is represented by alphanumeric codes that may be generated and recorded on a blockchain network and recognized as a method of payment by users on that network. In some cases, you can spend and trade virtual currencies, but these products do not have the same legal status as money, or ‘legal tender,’ in the United States, Canada, Mexico, and most other jurisdictions.

“The Internal Revenue Service states that virtual currencies are to be treated as property for U.S. federal tax purposes, with transactions required to be reported in U.S. dollars. If virtual currency is used to pay wages, it is subject to federal income tax withholding, and gains and losses from the sale or exchange of virtual currency have tax implications. If you hold virtual currencies for personal or investment purposes, the IRS requires you to report any gains or losses, which would be subject to capital gains tax rules.

“One popular type of virtual currency is known as cryptocurrency, or simply crypto. The term crypto refers to the process of cryptography, which is a mathematically intensive encryption process designed to enhance data protection and authentication. Some people are interested in cryptocurrencies for their perceived anonymity and ability to keep transactions secret, and one of the earliest and perhaps most well-known cryptocurrencies is bitcoin...

“Bitcoin is a cryptocurrency developed in 2009 by an anonymous person or group of persons operating under the nickname Satoshi Nakamoto. Like other cryptocurrencies, bitcoin is distinct from ‘fiat currencies’ such as the dollar, euro, renminbi or yen. Unlike a fiat currency, bitcoin isn’t represented or organized by a physical paper unit or coin. Rather, each bitcoin is a unique alphanumeric string of

computer code. Rather than being issued like fiat currencies by a central bank, a currency such as bitcoin is controlled by technology that determines how many bitcoins are produced and how transactions that use bitcoin are recorded. Proponents of the crypto world believe that bitcoin can be an attractive alternative to fiat currencies because it is not controlled by any central bank or government.

“Bitcoin is exchanged on the Bitcoin Network, a peer-to-peer payment system that operates using cryptography. Users can send and receive bitcoins by broadcasting digitally signed messages to the network using a cryptocurrency wallet. Transactions on the Bitcoin Network are recorded on a publicly distributed ledger called a blockchain, and validated by a proof-of-work system called mining...

“Bitcoin is one of thousands of cryptocurrencies. The purpose, functionalities and use of these cryptocurrencies may vary. Some share similarities with bitcoin. For instance, Litecoin, created in 2011 and the brainchild MIT-cum-Google coding prodigy Charlie Lee, is similar in many respects to bitcoin but it is not identical, since it uses a different mining algorithm.

“Ethereum (2015), on the other hand, is in fact a platform for ‘smart contracts,’ which are known as conditional transactions: computer code that enable certain events to be triggered when certain pre-defined conditions are met, such as the ability to unlock real products (renting a car, for instance) when payment is made. Ethereum has its own cryptocurrency known as Ether, which can be the form of payment used on these smart contracts.”

INITIAL COIN OFFERINGS (ICOS)

International Standards on Combating Money Laundering and the Financing of Terrorism & Proliferation – The FATF Recommendations – Adopted by the FATF Plenary in February 2012 – Updated October 2018 (FATF Recommendations) at p. 124:

“A virtual asset is a digital representation of value that can be digitally traded, or transferred, and can be used for payment or investment purposes. Virtual

assets do not include digital representations of fiat currencies, securities and other financial assets that are already covered elsewhere in the FATF Recommendations.”

Investor Bulletin: Initial Coin Offerings, Securities and Exchange Commission – Office of Investor Education and Advocacy (July 25, 2017) at p. 1:

“Developers, businesses, and individuals increasingly are using initial coin offerings, also called ICOs or token sales, to raise capital...”

“Virtual coins or tokens are created and disseminated using distributed ledger or blockchain technology. Recently promoters have been selling virtual coins or tokens in ICOs. Purchasers may use fiat currency (e.g., U.S. dollars) or virtual currencies to buy these virtual coins or tokens. Promoters may tell purchasers that the capital raised from the sales will be used to fund development of a digital platform, software, or other projects and that the virtual tokens or coins may be used to access the platform, use the software, or otherwise participate in the project. Some promoters and initial sellers may lead buyers of the virtual coins or tokens to expect a return on their investment or to participate in a share of the returns provided by the project. After they are issued, the virtual coins or tokens may be resold to others in a secondary market on virtual currency exchanges or other platforms.

“Depending on the facts and circumstances of each individual ICO, the virtual coins or tokens that are offered or sold may be securities. If they are securities, the offer and sale of these virtual coins or tokens in an ICO are subject to the federal securities laws.”

Investor Alert: Initial Coin Offerings: Know Before You Invest, Financial Industry Regulatory Authority, Inc. (August 31, 2017) at p. 1:

“Some startup companies are using initial coin offerings, also called ICOs or token sales, to raise capital. In an ICO, a company creates a new virtual coin or token that they offer for sale and disseminate to purchasers using blockchain technology, also called distributed ledger technology. Investors should be

aware that ICOs differ significantly from initial public offerings (IPOs). Unlike stocks, ICOs typically confer no ownership rights in the company; and unlike bonds, ICOs do not involve investors lending money to the issuer. Instead, ICOs involve new technologies and products that are highly technical and complex, and investors can lose some or all of the money they invest in an ICO.

“Depending on the facts and circumstances of each individual ICO, the virtual coins or tokens that are offered or sold may be securities. As a new Investor Bulletin from the Securities and Exchange Commission (SEC) notes, if the tokens in an ICO are securities, the offer and sale of these virtual coins or tokens are subject to the federal securities laws.

“An ICO involves the creation of a new virtual coin or token by a company looking to raise money. In general, the company announces a specified amount of funds that it wants to raise, and the fundraising continues until that amount is reached. ICOs are conducted online, and purchasers use fiat currency, like the U.S. dollar, or virtual currencies, like bitcoin and ether, to pay for the new tokens.

“To date, companies using ICOs as a capital-raising method have generally been startups that use blockchain technology as part of their business model to provide a particular service or product. These companies disseminate the new ICO tokens to buyers via blockchain. Blockchain technology involves a distributed database maintained over a network of computers connected on a peer-to-peer basis. The network participants can share and retain identical, cryptographically secured records in a decentralized manner-meaning there is no centralized server or intermediary. The blockchain technology used for the tokens in ICOs is similar to the bitcoin network, which creates and tracks transactions in the virtual currency, bitcoin.

“Companies that issue ICOs typically promote the offering through their own websites and through various online blockchain and virtual currency forums. Potential purchasers in an ICO may not receive a prospectus; instead, companies often publish a white

paper describing the ICO. According to the [SEC], some sellers of ICOs might lead buyers to believe that they can expect a return on their investment or otherwise be able to participate in a share of the returns provided by the project. Buyers also might be told that there will be an opportunity to sell the tokens on a secondary market or an online virtual currency exchange, although such secondary market liquidation venues are not guaranteed.”

SEC v. REcoin Group Foundation, LLC, DRC World Inc. a/k/a Diamond Reserve Club, and Maksim Zaslavskiy, Complaint filed September 29, 2017 (United States District Court for the Eastern District of New York) at pp. 6-7; ***SEC v. Blockvest, LLC and Reginald Buddy Rinngold, III a/k/a Rasool Abdul Rahim El,*** Complaint filed October 3, 2018 (United States District Court for the Southern District of California, Case 3:18-cv-02287-GPC-BLM) at pp. 7-8:

“An ICO is a fundraising event in which an entity offers participants a unique ‘coin’ or ‘token’ in exchange for consideration (often in the form of virtual currency—most commonly Bitcoin and Ether—or fiat currency).

“The tokens are issued on a “blockchain” or cryptographically secured ledger...

“The token may entitle its holders to certain rights related to a venture underlying the ICO, such as rights to profits, shares of assets, rights to use certain services provided by the issuer, and/or voting rights. These tokens may also be listed on online platforms, often called virtual currency exchanges, and tradable for virtual or fiat currencies. Often, the tokens are immediately tradable.

“ICOs are typically announced and promoted through public online channels. Issuers usually release a “whitepaper” describing the project and the terms of the ICO. To participate, investors are generally required to transfer funds (often virtual currency) to the issuer’s address, online wallet, or other account. After the completion of the ICO, the issuer will distribute its unique ‘tokens’ to the participants’ unique address on the blockchain.”

Securities and Exchange Commission v. PlexCorps (a/k/a and d/b/a Plexcoin and Sidepay.ca), Dominic Lacroix and Sabrina Paradis-Royer, Complaint filed December 1, 2017(United States District Court for the Eastern District of New York, Case No. 17-cv-07007) at pp. 9-10; ***AriseBank, Jared Rice Sr., and Stanley Ford,*** Amended Complaint filed February 2, 2018 (United States District Court for the District of Texas (Dallas Division), Case 3:18-cv-00186-M) at pp. 4-5:

“An ICO is a fundraising event in which an entity offers participants a unique ‘coin’ or ‘token’ in exchange for consideration (often in the form of crypto or fiat currency)

“The tokens are issued on a ‘blockchain’ or cryptographically secured ledger.

“Generally, coins or tokens may entitle holders to certain rights related to a venture underlying the ICO, such as rights to profits, shares of assets, rights to use certain services provided by the issuer, and/or voting rights. These coins or tokens may also be listed on online platforms, often called virtual currency exchanges, and tradable for crypto or fiat currency. Often, the coins or tokens are immediately tradable.

“ICOs are typically announced and promoted through public online channels. Issuers usually release a ‘whitepaper’ describing the project and the terms of the ICO. To participate, investors are generally required to transfer funds to the issuer’s address, online wallet, payment processor, or other account. After the completion of the ICO, the issuer will distribute its unique coin or token to the participants’ unique address on the blockchain.

“In some instances, the coins or tokens may continue to be sold by the original issuer after the ICO has completed. In others, they may only be obtained by purchasing them on secondary markets.”

In the Matter of Munchee, Inc., Securities Act Release No. 10445 (December 11, 2017) at p. 3, fn. 1:

“An ‘initial coin offering’ or ‘ICO’ is a recently developed form of fundraising event in which an entity offers participants a unique digital ‘coin’ or ‘token’ in exchange for consideration (most commonly Bitcoin, Ether, or fiat currency). The tokens are issued and distributed on a ‘blockchain’ or cryptographically-secured ledger. Tokens often are also listed and traded on online platforms, typically called virtual currency exchanges, and they usually trade for other digital assets or fiat currencies. Often, tokens are listed and tradeable immediately after they are issued.

“Issuers often release a ‘white paper’ describing the particular project they seek to fund and the terms of the ICO. Issuers often pay others to promote the offering, including through social media channels such as message boards, online videos, blogs, Twitter, and Facebook. There are websites and social media feeds dedicated to discussions about ICOs and the offer, sale and trading of coins and tokens.”

NASAA Reminds Investors to Approach Currencies, Initial Coin Offerings and Other Cryptocurrency-Related Investments with Caution, North American Securities Administrators Association (January 4, 2018) at p. 1:

“Last month, NASAA identified Initial Coin Offerings (ICOs) and cryptocurrency-related investment products as emerging investor threats for 2018. Unlike an Initial Public Offering (IPO) when a company sells stocks in order to raise capital, an IXO sells ‘tokens’ in order to fund a project, usually related to the blockchain. The token likely has no value at the time of purchase. Some tokens constitute, or may be exchangeable for a new cryptocurrency to be launched by the project, while others entitle investors to a discount, or early rights to a product or service proposed to be offered by the project.”

Informed Investor Advisory: Cryptocurrencies, North American Securities Administrators Association (April 13, 2018) at p. 1:

“When an issuer makes an ICO or ITO, it sells ‘coins’ or ‘tokens’ in order to fund a proposed project. These coins or tokens are not the same as common stock or other securities.”

Informed Investor Advisory: Initial Coin Offerings, North American Securities Administrators Association (April 16, 2018) at pp. 1-2:

“An Initial Coin Offering (ICO), also sometimes referred to as an Initial Token Offering (ITO), is a method used by an individual, group of individuals or organization to raise capital for a planned project. Most ICOs involve projects that are at the ‘idea’ stage and in many instances may lack a prototype or ‘real world’ implementation of the idea. To finance the idea or project through an ICO, promoters create a new virtual ‘coin’ or ‘token,’ which is then sold online to participants in the ICO in exchange for fiat currency, such as the U.S. or Canadian dollar or Mexican peso...”

“There are two main types of tokens: utility and equity. **Utility tokens** enable the holder to exchange the coin for a good or service in the future. **Equity tokens** entitle the holder to an interest in the revenue or ownership of the underlying venture.”

SEC v. Sohrab (“Sam”) Sharma, Robert Farkas and Raymond Trapani, Amended Complaint filed April 20, 2018 (United States District Court for the Southern District of New York, Case 1:18-cv-02909-DLC) at p. 7:

“An ICO is a fundraising event in which an entity offers participants a unique digital asset, often referred to as a ‘coin’ or ‘token,’ in exchange for consideration (often in the form of other digital assets - most commonly Bitcoin and Ether- or fiat currency). The tokens are issued on a ‘blockchain’ or cryptographically-secured ledger...”

“Generally, a token may entitle its holders to certain rights related to a venture underlying the ICO, such as rights to profits, shares of assets, rights to use certain products or services provided by the issuer, and/or voting rights. These tokens may also be listed on online platforms, often called exchanges, and are tradable for other digital assets or fiat currencies. Often, the tokens are immediately tradable.

“ICOs are typically announced and promoted through public online channels. Issuers usually release a ‘white paper’ describing the project and the terms of the

ICO. To participate, investors are generally required to transfer funds (often Bitcoin or Ether) to the issuer's digital address, online wallet, or other account. After the completion of the ICO, the issuer will distribute its unique 'tokens' to the participants' unique address on the blockchain."

Beaches and Bitcoin: Remarks before the Medici

Conference – Los Angeles (May 2, 2018), SEC Commissioner Hester M. Pierce:

"And then there are tokens or coins used in initial coin offerings, or ICOs. These look the most like securities. Their creator sells them as a means of raising funds. In one potential example, the issuer may want to build an environment in which the coins can be used—potentially as a medium of exchange, potentially as a means of executing or tracking exchanges—and sells the coins before the environment is built. The proceeds from the sales of tokens are used to build the system in which they will one day function. A coin that has no functionality at the time of sale will likely be cheaper to buy than one that offers entry into a fully realized environment. After all, which would you pay more for: a token for an arcade that is laid out in broad terms in a white paper, or a token for an arcade where you can play Space Invaders right now? The actual token—its form—would be no different, whether the arcade was built or not, but the functionality certainly would be."

SEC v. Titanium Blockchain Infrastructure Services, Inc.; EHI Internetwork and Systems Management, Inc. aka EHI-INSM, Inc.; and Michael Alan Stollery aka Michael Stollaire, Complaint filed May 22, 2018 (United States District Court for the Central District of California, Case CV18-4315-DSF (JPRX)) at pp. 6-7:

An initial coin offering or 'ICO' is a fundraising event in which an entity offers participants a unique 'coin' or 'token' or 'digital asset,' in exchange for consideration, often in the form of virtual currency – most commonly Bitcoin and Ether – or fiat currency...

"The digital assets are issued on a 'blockchain' or cryptographically secured ledger.

"Generally, digital assets entitle holders to certain rights related to a venture underlying the ICO, such as rights to profits, shares of assets, rights to use certain services provided by the issuer, and/or voting rights. These digital assets may also be listed on online platforms, often called virtual currency exchanges, and tradeable for virtual or fiat currencies. Often, the digital assets are immediately tradeable...

"ICOs are typically announced and promoted through public online channels. Issuers usually release a 'whitepaper' describing the offering and the terms of the ICO. To participate, investors are generally required to transfer funds (often virtual currency) to the issuer's address, online wallet, or other account. After the completion of the ICO, the issuer distributes its unique digital assets, commonly known as 'tokens,' to the participants' unique addresses on the blockchain."

Regulatory Notice 18-20, Financial Industry Regulatory Authority, Inc. (July 6, 2018) at p.2, fn. 1:

"For purposes of this Notice, the term 'digital asset' refers to cryptocurrencies and other virtual coins and tokens (including virtual coins and tokens offered in an initial coin offering (ICO) or pre-ICO), and any other asset that consists of, or is represented by, records in a blockchain or distributed ledger (including any securities, commodities, software, contracts, accounts, rights, intangible property, personal property, real estate or other assets that are 'tokenized,' 'virtualized' or otherwise represented by records in a blockchain or distributed ledger)."

The Alert Investor: The Ins and Outs of Initial Coin Offerings, Financial Industry Regulatory Authority, Inc. and BBB Institute (July 27, 2018) at pp. 1-2:

"An Initial Coin Offering, also known as an ICO, involves the creation and distribution of digital tokens by a company to raise capital. Here's how an ICO works. A company with a new idea woos investors by promoting the release of its own digital token. Companies that issue ICOs typically promote the offering through their own websites and through various online blockchain and virtual currency forums.

Potential purchasers in an ICO might not receive a prospectus; instead, companies often publish a white paper describing the ICO.

“In general, the company announces a specified amount of funds that it wants to raise, and the number of tokens available for purchase. The fundraising continues until that amount is reached. ICOs are conducted online, and purchasers can pay for their tokens with cryptocurrencies like bitcoin or ether, or fiat currency, like the U.S. dollar.

“Most companies that have used an ICO to raise money have been startups that use blockchain technology as part of their business to provide a particular service or product. These companies raise funds to establish a new blockchain-based business and in return issue their own digital tokens to investors. ICO tokens are disseminated to buyers via their blockchain network.”

In the Matter of TokenLot, LLC, Lenny Kugel, and Eli L. Lewitt, Securities Act Release No. 10543 (September 11, 2018) at pp. 2 (fn. 1), 3 (fn. 2) and 4 (fn. 3):

“ICOs are fundraising events in which an entity offers participants a digital asset, typically referred to as a ‘coin’ or ‘token,’ in exchange for consideration, often in the form of other digital assets such as Bitcoin and Ether, or fiat currency. Following an ICO, the digital tokens often are immediately tradeable in secondary markets.

“Often, ICO issuers sell digital tokens in various selling stages before the tokens are distributed to purchasers. Issuers sometimes call the earlier selling stages a ‘private sale’ or ‘pre-sale’ and later stages a ‘public sale.’ ‘Private sales’ or ‘pre-sales’ typically involve a time-limited sale of a certain number of digital tokens at a discount to the fixed-price set for the digital token during a ‘public sale,’ with the delivery of the token to the purchaser to be made in the future, typically in connection with the conclusion of the ICO.

“In connection with ICOs, issuers often release a ‘white paper’ describing the particular project they seek to fund and the terms of the ICO.”

In the Matter of Zachary Coburn, Securities Exchange Act Release No. 84553 (November 8, 2018) at p. 2, fn.2:

“ICO is a term that describes the offer and sale of digital assets issued and distributed on a blockchain. A blockchain is a type of distributed ledger, or peer-to-peer database spread across a network, that records all transactions in the network in theoretically unchangeable, digitally-recorded data packages called blocks. Each block contains a batch of records of transactions, including a timestamp and a reference to the previous block, linking the blocks together in a chain. The system relies on cryptographic techniques for secure recording of transactions. A blockchain can be shared and accessed by anyone with appropriate permissions. The Ethereum Blockchain is an open, or permissionless, blockchain that is a record of events resulting from the execution of code (smart contracts) on the Ethereum Blockchain. ERC20 refers to a specific Ethereum token issuing protocol, formally adopted by the Ethereum network in September 2017, and used on the Ethereum Blockchain. (ERC stands for Ethereum Request for Comments and 20 is the unique identification used to distinguish this coding standard from other standards.) The ERC20 token standard, created in November 2015, ‘allows any token on Ethereum to be re-used by other applications: from wallets to decentralized exchanges’ and ‘provides basic functionality to transfer tokens, as well as allow tokens to be approved so they can be spent by another on-chain third party.’ See Fabian Vogelsteller and Vitalik Buterin,

ERC-20 Token Standard, November 19, 2015, <https://github.com/ethereum/EIPs/blob/master/EIPS/eip-20.md>. The widespread adoption of the ERC20 token standard has also led developers to design applications, such as EtherDelta, that are compatible with any ERC20 token.”