

EXHIBIT A

Tera Exchange September 11, 2014 Bitcoin Self-Certification Submission

TeraExchange, LLC
Rule Implementation Submission 2014-25
September 11, 2014

1. The contract's terms and conditions are attached as Exhibit A.
2. The intended listing date is the next business day following the filing of this Submission.
3. Attached please find a certification that: (a) Each USD/Bitcoin Swap complies with the Commodity Exchange Act and Commodity Futures Trading Commission ("Commission") Regulations thereunder; and (b) TeraExchange has concurrently posted a notice of pending product certification with the Commission and a copy of this submission and all non-confidential attachments, concurrent with this filing on the TeraExchange website at <http://teraexchange.com/RND.html>.
4. A concise explanation and analysis of the USD/Bitcoin Swap's compliance with applicable provisions of the Commodity Exchange Act, including the relevant Core Principles, and the Commission's Regulations thereunder appears below.
5. There were no opposing views expressed regarding these amended rules.
6. Confidential treatment is requested for Appendices 2 – 6 of this Submission. A petition for confidential treatment is included herewith.

TERA[^] EXCHANGE

TeraExchange, LLC
25 DeForest Avenue
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Summit, NJ 07901

September 11, 2014

BY ELECTRONIC MAIL: submissions@cftc.gov

TeraExchange Submission 2014-25

Christopher Kirkpatrick
Office of the Secretariat
Commodity Futures Trading Commission
Three Lafayette Center
1155 21st Street, N.W.
Washington, DC 20581

Re: TeraExchange Submission 2014-25: Listing of USD / Bitcoin Non-Deliverable Forward Transaction by Certification Pursuant to Commission Regulation 40.2(a)

Dear Secretary Kirkpatrick:

TeraExchange, LLC ("TeraExchange") hereby notifies the Commodity Futures Trading Commission (the "Commission" or "CFTC"), pursuant to Commission Regulation 40.2(a), that it is certifying the USD / Bitcoin Non-Deliverable Forward Transaction ("USD/Bitcoin Swap") for trading on its swap execution facility ("SEF").

Please note that as described below the terms of and conditions for this USD/Bitcoin Swap require that at least six (6) underlying bitcoin exchanges be part of the Tera Bitcoin Price Index. In order to be a constituent in the Index, and as provided for in Exhibit B, Section C, such exchange must sign and maintain an Information Sharing Agreement with TeraExchange, and meet such other criteria stated therein. This requirement has been satisfied as of the date of this submission. In addition, please be advised that TeraExchange's regulatory service provider, the National Futures Association, has amended Exhibit 1 of Schedule A of the Regulatory Service Agreement to include this USD/Bitcoin Swap.

This submission letter includes the following:

- (a) The Submission cover sheet;
- (b) The terms and conditions for the USD/Bitcoin Swap (Exhibit A, which includes Appendix 1 of Exhibit A);

- (c) A concise explanation and analysis of the USD/Bitcoin Swap's compliance with applicable provisions of the Commodity Exchange Act (the "Act"), including the relevant Core Principles, and the Commission's Regulations thereunder (Exhibit B); and
- (d) Appendices 2 – 6, for which confidential treatment is requested. A petition for confidential treatment is included herewith.

Certifications

I hereby certify that each USD/Bitcoin Swap complies with the Act and Commission Regulations thereunder. I further certify that TeraExchange has concurrently posted a notice of pending product certification with the Commission, and a copy of this submission and all non-confidential attachments, concurrent with this filing on the TeraExchange website at <http://teraexchange.com/RND.html>.

Please contact the undersigned at (908) 273-8266 or at pwilson@teraexchange.com with any questions.

Sincerely,

Peter W. Wilson

Peter W. Wilson
Chief Compliance Officer

Exhibit A

TERMS AND CONDITIONS OF THE USD / BITCOIN NON-DELIVERABLE FORWARD TRANSACTION

The following terms and conditions shall apply to TeraExchange's USD / Bitcoin Non-Deliverable Forward Transactions ("USD/Bitcoin Swap")¹. While TeraExchange constructed this contract as a Non-Deliverable Forward, it is not an FX transaction since bitcoin is not a currency.

- (a) The USD/Bitcoin Swap shall be executed subject to TeraExchange's Rules. The execution method utilized shall be in the form and manner specified by TeraExchange.
- (b) Trading will only occur when there is a minimum of six (6) underlying bitcoin exchanges that are included in the calculation of the Tera Bitcoin Price Index. In order to be a constituent in the Index, and as provided for in Exhibit B, Section C, such exchange must sign and maintain an Information Sharing Agreement with TeraExchange, and meet such other criteria stated therein. (This requirement has been satisfied as of the date of this submission.)
- (c) The terms and conditions that apply to the USD/Bitcoin Swap are as follows, as well as those included in Appendix 1 of Exhibit A below:

USD / Bitcoin Non-Deliverable Forward Transaction	
General	
Contract Structure	A bilateral outright forward agreement that is settled upon the difference between the contract price and the Tera Bitcoin Price Index fixing
Clearing Venue	Bilateral
Contract Currency	USD
Reference Asset	bitcoin
Settlement Currency	USD
Quoting Convention	USD per bitcoin
Price Increment	There is no minimum price increment
Minimum Notional Size	1,000 notional units of USD
Minimum Notional Size Increment	0.01 notional units of USD
Forward Rate	The Contract price is expressed as the amount of USD per bitcoin
Trading Hours	00:01 to 24:00 New York Time
Valuation Date	As stated in the transaction confirmation as agreed to by the parties
Reference Index	Tera Bitcoin Price Index
Settlement Date	As stated in the transaction confirmation as agreed to by the parties
Settlement Procedure	As stated in the transaction confirmation as agreed to by the parties
Position Accountability	As may be determined and published by TeraExchange under CFTC Regulation 37.600 (c)

¹ Bitcoin is an asset and not a currency. The Financial Crimes Enforcement Network ("FinCEN") regulations define currency ("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, FinCEN recently issued guidance that "virtual" currency is not a "real currency" since it lacks some of the attributes of a "real currency", including the fact that it does not have legal tender status in any jurisdiction. http://www.fincen.gov/statutes_regs/guidance/html/FIN-2013-G001.html. In addition, according to the Internal Revenue Service ("IRS"), for federal tax purposes bitcoin should be treated as property. The IRS has stated that under applicable law, virtual currency is not treated as currency that could generate foreign currency gain or loss for U.S. federal tax purposes. <http://www.irs.gov/pub/irs-drop/n-14-21.pdf>.

(d) By entering into a USD/Bitcoin Swap listed on TeraExchange the terms and conditions shall also: (i) the Master Confirmation Agreement and Addendum to Master Confirmation Agreement; (ii) the credit terms agreed to in accordance with paragraph (e) below; and (iii) the USD/Bitcoin Swap Transaction Confirmation. Please see Appendix 1 of Exhibit A.

(e) (i) Each USD/Bitcoin Swap shall include a representation that each party intends to meet its financial obligations associated with the transaction through:

- (A) Pledged or segregated assets, including posting or receiving margin pursuant to an ISDA Credit Support Annex, Master Confirmation Agreement and Addendum to Master Confirmation Agreement, which is accepted and agreed to by each party and submitted to TeraExchange prior to accessing the SEF;
- (B) A written credit support agreement acceptable to the other party and submitted to TeraExchange prior to execution confirmation;
- (C) A written third-party guarantee acceptable to the other party and submitted to TeraExchange prior to execution confirmation; or
- (D) Its available financial resources.

(ii) Confirmation that a trade was executed shall occur upon the party's receipt of the trade confirmation report that incorporates by reference the applicable credit terms of subparagraphs (A), (B) or (C) of paragraph (e)(i). No additional submission to TeraExchange is required prior to execution for transactions relying on subparagraph (D) of paragraph (e)(i) as the credit term.

EXHIBIT B

CONCISE EXPLANATION OF COMPLIANCE WITH CORE PRINCIPLES

This exhibit includes a concise explanation and analysis of the certified USD/Bitcoin Swap's compliance with applicable provisions of the Act, including the relevant Core Principles, and the Commission's Regulations thereunder.

I. Core Principle 2 – Compliance with Rules

As with all products listed for trading on TeraExchange, trading in the USD/Bitcoin Swap will be subject to compliance with the Act, Commission Regulations and the TeraExchange Rulebook (the "Rules"). Chapter 5 of the Rules sets out in detail the trading practice and business conduct rules applicable to all Participants. In general:

- A. Under Rule 517, Participants are prohibited from engaging in any conduct in violation of Applicable Law or the Rules.
- B. Under Rule 518, any violation of the Rules or act constituting fraud, dishonorable or dishonest conduct, or conduct inconsistent with just and equitable principles of trade is an offense.
- C. Under Rule 519, fraudulent acts of any kind, including but not limited to front-running, money passes, trading ahead of or against customers, and accommodation trading, are all prohibited.

Also included in Chapter 5 is a series of specific Rules intended to deter abusive and disruptive trading practices, including prohibitions on the following:

- A. Fictitious, wash or non-competitive transactions (Rule 520);
- B. Market disruption, including violating bids and offers, closing period violations, and spoofing (Rule 521);
- C. Market manipulation (Rule 522);
- D. Misstatements (Rule 523);
- E. Acts detrimental to the SEF (Rule 524);
- F. Misuse of the SEF (Rule 525);
- G. Withholding of orders (Rule 526);
- H. Trading against or crossing orders (Rule 527); and
- I. Disclosing orders (Rule 528).

TeraExchange's market regulation staff, along with its regulatory service provider, will conduct surveillance and initiate disciplinary proceedings as necessary to enforce compliance with the Rules, the Act and Commission Regulations.

II. Core Principle 3 – Swaps not Readily Susceptible to Manipulation

Appendix B to Part 37 provides that a demonstration with regard to Core Principle 3 should be made with reference to Part 38 Appendix C. Appendix C provides that the following information should be provided:

- A. A narrative describing the contract;
- B. A detailed cash market description for physical and cash-settled contracts; and
- C. For contracts that are cash settled to an index, the index's methodology showing that the index is reflective of the underlying cash market, is not readily subject to manipulation or distortion, and is based on a cash price series that is reliable, acceptable, publicly available and timely.

A. Narrative Describing the Contract

“(a)(1) A narrative describing the contract, including data and information to support the contract’s terms and conditions, as set by the designated contract market. When designing a futures contract, the designated contract market should conduct market research so that the contract design meets the risk management needs of prospective users and promotes price discovery of the underlying commodity.”

“(C) Cash Settlement Procedure: The cash settlement price should be reliable, acceptable, publicly available, and reported in a timely manner as described in paragraphs (c)(3)(iv) and (c)(3)(v) of this appendix C.”

The USD/Bitcoin Swap is a bilateral non-deliverable forward contract that is executed for a notional amount, in which dollars are exchanged at contract expiration to settle the difference between the forward rate in U.S. Dollars per bitcoin and the settlement rate in U.S. Dollars per bitcoin using the “Tera Bitcoin Price Index” as the reference index, as defined in Section C below.²

Under the standard terms of the USD/Bitcoin Swap, the reference index is the Tera Bitcoin Price Index, and settlement is in U.S. Dollars. The terms and conditions of the USD/Bitcoin Swap are attached as Exhibit A. These terms also include the Master Confirmation Agreement, Addendum to Master Confirmation Agreement and the Transaction Confirmation, which are attached as Appendix 1 of Exhibit A.

Cash Settlement Procedure

The cash settlement procedure for the USD/Bitcoin Swap is reliable, acceptable, publicly available, and reported in a timely manner. On the Valuation Date, the contracted USD / Bitcoin Forward Rate is compared to the Bitcoin Rate, as reported by the Tera Bitcoin Price Index, which appears on

² Bitcoin is an asset and not a currency. The Financial Crimes Enforcement Network (“FinCEN”) regulations define currency (“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, FinCEN recently issued guidance that “virtual” currency is not a “real currency” since it lacks some of the attributes of a “real currency”, including the fact that it does not have legal tender status in any jurisdiction. http://www.fincen.gov/statutes_regs/guidance/html/FIN-2013-G001.html. In addition, according to the Internal Revenue Service (“IRS”), for federal tax purposes bitcoin should be treated as property. The IRS has stated that under applicable law, virtual currency is not treated as currency that could generate foreign currency gain or loss for U.S. federal tax purposes. <http://www.irs.gov/pub/irs-drop/n-14-21.pdf>.

the TeraExchange platform as of 5:00 p.m. New York time. The contract is net-settled in U.S. Dollars such that:

$$\text{Settlement Currency Amount} = \text{Notional value} * (1 - \text{Settlement Rate} / \text{Forward Rate})$$

$$\text{Settlement Rate} = \text{Bitcoin Rate}$$

If the Settlement Currency Amount is a positive number, the Reference Asset Buyer will pay that amount in the Settlement Currency to the Reference Asset Seller or, if the Settlement Currency Amount is a negative number, the Reference Asset Seller will pay the absolute value of that amount in the Settlement Currency to the Reference Asset Buyer. The Valuation Date is determined by the counterparties, but it is subject to adjustment in accordance with the Preceding Business Day Convention; and in the event of an Unscheduled Holiday, subject to adjustment in accordance with the Following Business Day Convention.³ If, for some reason, the price of the Tera Bitcoin Price Index is not available on the Valuation Date, TeraExchange will determine the price, subject to Valuation Postponement, based on its own discretion. The Settlement Date is also determined by the counterparties, and is as soon as practicable, but in no event later than two (2) Local Business Days after the Valuation Date. The Settlement Date is subject to adjustment if the Valuation Date is adjusted in accordance with the Following Business Day Convention, or if Valuation Postponement⁴ applies.

TeraExchange will display the daily Bitcoin Rate on its platform to market participants in a timely manner.

B. Cash Market Narrative

“(2) A detailed cash market description for physical and cash-settled contracts. Such descriptions should be based on government and/or other publicly-available data whenever possible and be formulated for both the national and regional/local market relevant to the underlying commodity.”

Background on Bitcoin

Bitcoin is an asset⁵ and payment system that provides users with a mechanism to transfer value for free or a nominal fee. It was introduced as open source software in 2009 by developer Satoshi Nakamoto.⁶ Bitcoin is not a currency, although it is often referred to as a “crypto-currency” because it uses cryptography to control the creation and transfer of these assets that act like money.

³ Notwithstanding the foregoing, if the counterparties have specified a Scheduled Valuation Date that falls on a date that, as at the Trade Date, is not a scheduled Local Business Day in New York, no adjustment shall be made on account of the fact that such date is not a Local Business Day in New York.

⁴ “Valuation Postponement” means, for purposes of obtaining a Settlement Rate, that the Bitcoin Rate will be determined on the Local Business Day first succeeding the day on which a Price Source Disruption ceases to exist, unless the Price Source Disruption continues to exist (measured from the date, that, but for the occurrence of the Price Source Disruption, would have been the Valuation Date) for a consecutive number of calendar days equal to the Maximum Days of Postponement. In such event, the Bitcoin Rate will be determined on the next Local Business Day after the Maximum Days of Postponement in accordance with the next applicable Disruption Fallback.

⁵ See *supra* Note 1.

⁶ The name “Satoshi Nakamoto” is likely a pseudonym for a person or group of people. The idea for Bitcoin originated from an open source paper written by Nakamoto. See Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System* (2009), [bitcoin.org](https://bitcoin.org/bitcoin.pdf), <https://bitcoin.org/bitcoin.pdf>.

Conventionally, the capitalized word “Bitcoin” refers to the technology and network, whereas lowercase “bitcoin” refers to the asset itself.

The bitcoin market is very transparent. Every single transaction (i.e. transfer of ownership) in the Bitcoin network is stored on a public general ledger, called the “blockchain.”⁷ Anyone in the public can access this data. Through the blockchain, any person can tell how many bitcoins are stored at any publicly used bitcoin address (i.e. account). Unlike traditional banks, which maintain complete privacy of accounts and account holders, all Bitcoin addresses/accounts are visible to the public, though the name of the owner of that address is withheld.⁸ Accordingly, any member of the public can readily retrace the steps of any bitcoin transaction. The blockchain can be viewed by the public at multiple websites, such as <https://blockchain.info>, blockexplorer.com, <https://www.biteasy.com>.

The supply of bitcoin appears technically limited since Bitcoin⁹ mandates that only 21 million bitcoins can ever be created by miners, and bitcoins will stop being produced as of 2140.¹⁰ It is critical to highlight, however, just like fractional ounces of gold, other precious metals, or other commodities, a bitcoin can be fractionally divided into smaller parts; the smallest divisible amount is one hundred millionth of a bitcoin.¹¹ That limited supply, coupled with trust in the Bitcoin protocol, software and its network as well as growing worldwide acceptance, create value. It is the varying opinions regarding its value that creates the tradable market.

For a more detailed technical discussion regarding Bitcoin, please see Appendix 2.

Bitcoin in the Global Marketplace

The bitcoin marketplace is global and continues to mature. As a form of payment for products and services, bitcoin has seen tremendous growth. As of September 2014, the total market capitalization of outstanding bitcoins is valued at approximately \$6.5 billion. This is based on, per the blockchain, the current number of bitcoins in circulation multiplied by its present value per the Tera Bitcoin Price Index. Bitcoins are used on every continent, except Antarctica. Consumers looking to engage in commerce with bitcoins can do so almost anywhere in the world. Private individuals and organizations list bitcoin for exchange in over 200 countries, and more than 6,000 cities.¹² Every day, over 60,000 unique transactions are recorded into the blockchain. Users can exchange bitcoins at over 70 different exchanges, and can convert bitcoins into more than 10 different currencies.

There are a number of reasons for the global acceptance of bitcoin by merchants. First, merchants are incentivized to accept bitcoin because transaction fees are substantially lower than the fees imposed by credit card processors. The fees typically charged to merchants are generally between

⁷ Although a transaction is visible on the blockchain, the elements of transfer, such as value, other assets involved, names, etc. are *not* contained in the blockchain. The blockchain only contains information regarding the amount of bitcoins transferred and the public bitcoin addresses involved in the transaction.

⁸ There are measures that people can take to make their activities more opaque on the bitcoin network, such as not using the same bitcoin addresses consistently, and not transferring a significant number of bitcoin to a single address.

⁹ The Bitcoin protocol and software are published openly and any developer around the world can review the code or make their own modified version of the Bitcoin software or contribute to the software’s development. See <https://bitcoin.org/en/faq>; see also “Bitcoin: A Peer-to-Peer Electronic Cash System,” available at <https://bitcoin.org/bitcoin.pdf>.

¹⁰ The block reward will be halved to 12.5 bitcoins in 2017 and again approximately every four years thereafter. By 2014 estimates there will be 21 million bitcoins in existence in 2140, and transaction processing will only be rewarded by the transaction fees. See description on Wikipedia, at <http://en.wikipedia.org/wiki/Bitcoin>.

¹¹ The smallest fractional unit of a bitcoin is called a “satoshi” (0.00000001 bitcoin). See <https://en.bitcoin.it/wiki/FAQ>.

¹² <https://localbitcoins.com/statistics>.

2-4% depending on the credit card company. Second, unlike credit cards, there is no risk of fraud or identify theft. For instance, the recent Target credit card hack is only one example of the massive corporate breaches that have historically plagued banks and retailers alike, and more importantly have exposed the private information of the customers. Finally, there are no chargebacks with bitcoin. When a credit card is stolen and used at a merchant, the credit card company will chargeback the merchant for the fraudulent purchase. The credit card companies take the position that it is the merchant who is liable since it did not adequately authenticate the customer's identify. When a customer transfers bitcoin, however, there is no risk of a chargeback; she cannot retrieve the bitcoin back without the merchant's consent. To put this all in perspective, the total global payment-card fraud losses in 2012 were \$11.3 billion, up nearly 15% from the prior year.¹³ Ultimately, these enormous losses are pushed down and assumed by the consumer and merchant through higher prices and fees. For these reasons, merchants have quickly embraced the value proposition of bitcoin.

Since merchants are beginning to appreciate the above benefits, there is an emerging list of global businesses that now accept bitcoin. They include, among others: Dish Network, Tigerdirect, Overstock, Virgin Galactic, Wordpress, Lord & Taylor, Cheapflights.com, Zynga, the Sacramento Kings, the San Jose Earthquakes, and Expedia. It is also important to highlight that the experience of the merchants accepting bitcoin is extremely positive: 97% of merchants polled are glad they started accepting bitcoin and 96% of them would recommend bitcoin to another business.¹⁴

Yelp, which has an average of 132 million unique monthly visitors, lists whether restaurants, shops, museums, and other establishments being reviewed accept bitcoin as payment.¹⁵ In addition, Dell, a multinational computer technology company, became the largest business in the world to accept bitcoin.¹⁶ The list of retailers grows every day and includes businesses of all sizes. With websites like <http://www.coinmap.org/> and <https://spendbitcoins.com/places/>, users can find a current list of bitcoin accepting businesses in their area. Bitpay, a transaction processing company for over 30,000 different businesses and charities, is sponsoring an NCAA College Football Bowl.¹⁷ BitPay is a leading service provider in this space that specializes in processing bitcoin payments and enabling merchants to accept bitcoin using a variety of website plugins and other integrations.

The growing bitcoin market extends beyond merchants and Silicon Valley startups. Wall Street and institutional investors have sought various ways to gain exposure to the Bitcoin space. Pantera Capital created a bitcoin hedge fund, with investors such as Fortress Investment, Ribbit Capital, Benchmark Capital, and others contributing over \$200 million in investments.¹⁸ SecondMarket's private Bitcoin Investment Trust has over \$70 million in assets.¹⁹ Binary Financial, in addition to investing heavily in mining hardware producer BitFury, trades bitcoins on behalf of its clients.²⁰

¹³ <http://www.economist.com/news/finance-and-economics/21596547-why-america-has-such-high-rate-payment-card-fraud-skimming-top>.

¹⁴ <http://www.coindesk.com/survey-results-96-of-merchants-would-recommend-bitcoin-peers/>.

¹⁵ <http://officialblog.yelp.com/2014/04/now-on-yelp-businesses-that-accept-bitcoin.htm>.

¹⁶ <http://www.coindesk.com/computer-giant-dell-now-accepts-bitcoin/>.

¹⁷ <http://www.coindesk.com/bitcoin-ncaa-college-football-bowl-sponsorship-bitpay/>; See also <https://bitpay.com/>.

¹⁸ <http://www.reuters.com/article/2014/03/19/bitcoin-pantera-idUSL3N0MG14B20140319>; See also http://www.sec.gov/Archives/edgar/data/1598389/000090266414002722/xslFormDX01/primary_doc.xml.

¹⁹ <http://www.bitcointrust.co/>.

²⁰ <http://www.coindesk.com/6-new-hedge-funds-seeking-bitcoin-returns/>.

Bloomberg, Yahoo! Finance, and Google Finance all list bitcoin prices.²¹ Circle Internet Financial is launching a free platform that will allow users to seamlessly link a bank account to a Circle bitcoin account.²²

While there is robust participation in the market, bitcoin is not immune to volatility. The USD/Bitcoin Swap is a non-deliverable forward contract that would allow market participants to control their exposure and manage their risks. It is a regulated hedging tool that the market needs but is not currently available to them. For example, in September 2013 the value of bitcoin was just over \$100. This valuation spiked three months later in December to over \$1,000 and now is currently around \$485. This swap contract is a critical hedging tool for market participants to limit, as they deem appropriate, their exposure to this volatility.

As discussed above, there is a growing list of global consumer service providers that accept bitcoin. And just like any other asset in their portfolio, these institutions need a suitable hedging product to manage their exposures. In addition, this contract would serve as a means to promote price discovery for bitcoin; it would reflect the price that market participants are willing to pay for bitcoins at various points in the future. The demand for this USD/Bitcoin Swap contract is substantial and continues to grow daily. As more and more institutions gain exposure to bitcoin in various ways, the more important and relevant this swap contract is to them. There are numerous market makers and market participants that are eager to engage in this swap transaction. In sum, the market is very enthusiastic about a regulated bitcoin swap contract that trades on a regulated exchange.

Security

The key to Bitcoin's security lies with the blockchain. The blockchain is a complete chronological record of every transaction. Anyone can look up the public address of each sender and recipient, of every transaction. If a thief steals bitcoins, the stolen funds can be traced to a new public address as soon as they are transferred. In addition, a criminal seeking to falsify the blockchain faces an insurmountable hurdle because it requires calculating a new proof-of-work for each counterfeited block. Accordingly, the amount of computational power necessary to carry out such an attack ensures that a successful attack will not occur.²³

Bitcoin is also resistant to cyber-attack. Network security experts have tried and failed to hack Bitcoin's open source and publicly available code.²⁴ No expert has found a fundamental flaw in Bitcoin, unlike other commonly used systems.²⁵ The public perception of Bitcoin's security vulnerability is misplaced; it is not the Bitcoin software, but rather the risks lie with the third party service providers, such as the wallet services and exchanges that poorly perform custody obligations. In fact, these wallet and custody services face many of the same internet security challenges that traditional banks face.²⁶ Fortunately, tremendous strides are being made in this space. For instance, these service providers continue to develop and enhance their security features by offering tools

²¹ <http://www.bloomberg.com/news/2014-04-30/bitcoin-now-bloomberg/>; see also <http://www.coindesk.com/google-bitcoin-price-conversion/>.

²² <http://dealbook.nytimes.com/2014/03/26/start-up-unveils-bitcoin-payments-product-and-additional-financing/>.

²³ See Nakamoto at 6-8.

²⁴ <http://www.businessinsider.com/dan-kaminsky-highlights-flaws-bitcoin-2013-4>.

²⁵ Experts did find a flaw in the DNS (domain name system), but none in Bitcoin. See <http://www.kb.cert.org/vuls/id/800113>.

²⁶ See Brito, A Primer for Policymakers at 23.

such as additional encryption.²⁷ This is due, in part, to the substantial infrastructure that continues to grow around Bitcoin. The amount of venture capital raised by Bitcoin enterprises so far this year has already surpassed the total amount raised in 2013, and is projected to reach \$300 million by the end of 2014.²⁸

C. Description and Analysis of the Tera Bitcoin Price Index (Underlying Price Series)

“For contracts that are cash settled to an index, the index’s methodology should be provided along with supporting information showing how the index is reflective of the underlying cash market, is not readily subject to manipulation or distortion, and is based on a cash price series that is reliable, acceptable, publicly available and timely (defined in paragraphs (c)(2) and (c)(3) of this appendix C).”

The Tera Bitcoin Price Index represents a globally-orientated, USD-equivalent price for bitcoin. Since the Index receives data from a number of global bitcoin exchanges, the Tera Bitcoin Price Index accurately reflects the active underlying cash market. This data includes among other things, volume, bid/ask and execution prices. At the same time, the diversity of these exchanges coupled with the Tera Bitcoin Price Index’s strict filtering methodology, neutralizes the influence that potential manipulative behavior may exert over the Index. It is a reliable Index since it only includes exchanges that have a broad customer base, with minimum trading sizes, with acceptable daily trading volume, and timely customer withdrawals. The Index will be publically available to market participants and is updated at least every 5 seconds.

The Tera Bitcoin Price Index is reflective of the underlying bitcoin market. As discussed in detail above, even though the Bitcoin network is decentralized, there are robust, thriving and active exchanges that trade bitcoin all over the world. These exchanges provide real-time, reliable and public market data regarding their transactions. There is not, however, one individual exchange that is completely instructive or accepted by market participants. Accordingly, by blending the prices from a diverse set of widely utilized exchanges and subjecting their data to the Tera Bitcoin Price Index’s filtering methodology, the Index provides a reference that is indicative of the fair value of the spot price. The Index also acts as a price discovery tool for market participants to consider when valuing bitcoin. In addition, the Tera Bitcoin Price Index will be used on a daily basis by custodians holding margin to mark-to-market the USD/Bitcoin Swap positions that are held by market participants. It is for these reasons that the market will greet the Index with widespread acceptance because it is the first Index to demonstrate that it is reliable and not readily susceptible to manipulation.

The Tera Bitcoin Price Index is not readily susceptible to manipulation. The security of the blockchain coupled with the propriety characteristics of the Index, make it difficult to manipulate. The Tera Bitcoin Price Index employs strict and objective criteria for the Index. The proprietary methodology employed is designed to ensure that only reliable, active and dependable exchanges qualify. In order to consider an exchange for inclusion in the Tera Bitcoin Price Index, an exchange must at a minimum:

²⁷ See id. at 18-20.

²⁸ <http://www.coinspeaker.com/2014/06/06/bitcoin-venture-capital-this-year-already-30-higher-than-total-investment-in-2013/>.

1. Serve an international customer base;
2. Provide an API (i.e., electronic access) that streams live prices;
3. Provide a bid-offer spread for an immediate sale and an immediate purchase;
4. Have a minimum trade size that is less than \$1,000 USD;
5. Have daily and monthly trading volume that meets minimum acceptable levels as determined by TeraExchange;
6. Permit withdrawals and deposits of fiat currency as well the transfer of bitcoin within a commercially reasonable period of time;
7. Meet regulatory, operational and technological criteria established by TeraExchange;
8. Charge reasonable transaction fees (exchanges that charge zero fees are excluded); and
9. Execute and maintain an Information Sharing Agreement with TeraExchange.

This qualitative criteria, along with the names of the exchanges that comprise the Index, will be available to market participants. Once an exchange qualifies to participate in the Index, the Tera Bitcoin Price Index employs a robust set of quantitative criteria that directs the impact each exchange's market data has over the Index. The overall objective of this filtering process is to dampen the impact of individual exchange transient events. Components of the Index include:

Intra-Day Filter: The Tera Bitcoin Price Index enforces its proprietary filtering criteria intra-day and will exclude data those exchanges that no longer meet the requisite criteria.

Volume Weight Coefficient: The Tera Bitcoin Price Index uses a rolling average to calculate the weight coefficient assigned to each individual exchange. Although higher volume exchanges carry greater weight within the Index calculation, the weight coefficient that is employed limits the concentration of any one qualified marketplace.

Data Set Filtering: Price data from each exchange is considered and evaluated, with anomalous figures having no influence over the Index.

In addition, TeraExchange implemented a strong market surveillance program that monitors the trading activities of each exchange in the Index. The purpose of this program is to identify any unusual or anomalous behavior. Since the Index filters market data on a real-time basis, TeraExchange will be able to review the trading activity at each underlying exchange. This review includes, specifically, analyzing data that causes an exchange to be removed from the Index. Anomalous behavior may include, for example, an unusually large spike in volume or a substantial price diversion at one of the exchanges. In this event, TeraExchange will coordinate and confer with the exchange's senior management, pursuant to the Information Sharing Agreement, to discuss the matter. After this analysis, TeraExchange may, as appropriate and if warranted, modify the Index. Please see Section III below for a discussion regarding the Information Sharing Agreement.

III. Core Principle 4 – Monitoring of Trading and Trade Processing

A. §37.403: Additional Requirements for Cash-Settled Swaps

For cash-settled swaps, the swap execution facility shall demonstrate that it monitors the pricing of the reference price used to determine cash flows or settlement; For cash-settled swaps listed on the swap execution facility where the reference price is formulated and

computed by the swap execution facility, the swap execution facility shall demonstrate that it monitors the continued appropriateness of its methodology for deriving that price.

The Tera Bitcoin Prince Index, as explained above, is reflective of the underlying cash market, is not susceptible to manipulation, and is based on a cash price series that is reliable, acceptable, publicly available and timely. TeraExchange continually monitors the Index, its constituents, the influence the data each exchange exerts over the Index as well as potential new bitcoin exchanges that may qualify for inclusion. Further, since TeraExchange is receiving live data from each exchange, it is able to monitor the underlying market in real-time. Based upon its internal control protocols, certain data is flagged by TeraExchange and subject to closer scrutiny. Please see Appendix 5. In addition, the price of the Index and its relationship to the underlying market is regularly assessed to validate that the Index methodology remains appropriate. This surveillance program is designed to ensure that the Index is not susceptible to manipulation, price distortions or market disruptions. If deemed appropriate, TeraExchange will revise the Index or create new methodologies to resolve the threat of disruptions or distortions in the pricing of the Index.

B. §37.404: Ability to Obtain Information

A swap execution facility shall demonstrate that it has access to sufficient information to assess whether trading in swaps listed on its market, in the index or instrument used as a reference price, or in the underlying commodity for its listed swaps is being used to affect prices on its market. A swap execution facility shall have rules that require its market participants to keep records of their trading, including records of their activity in the index or instrument used as a reference price, the underlying commodity, and related derivatives markets, and make such records available, upon request, to the swap execution facility or, if applicable, to its regulatory service provider, and the Commission.

TeraExchange implemented a strong market surveillance program that monitors the trading activities of each exchange in the Index. In support of this effort, TeraExchange is establishing strong business relationships with management at each underlying exchange that is a component of the Index to ensure that TeraExchange fulfills its regulatory obligations. To that end, in order to be included in the Index each underlying bitcoin exchange is required to execute and maintain an Information Sharing Agreement with TeraExchange. Please see Appendix 6. The objective of this Agreement is to provide TeraExchange with access to sufficient position and trading information at the underlying markets to help it determine if such market was used to affect the Index. In addition, this Agreement allows for TeraExchange to share such information with the CFTC.

TeraExchange, along with its regulatory service provider, monitor each market participant's trading activity on the SEF. Along with various internal and external surveillance tools, TeraExchange has a system that monitors swaps trading in real-time and allow for the surveillance team to recognize, for example, large trade activity. It also allows for the team to monitor the relationship between anomalous trading behavior and prices at the underlying bitcoin exchanges and USD/Bitcoin Swap settlement dates.

As part of its surveillance program, and in addition to the Information Sharing Agreement, the Rules of TeraExchange authorize it to obtain a market participant's trading activity in the underlying bitcoin market. Specifically, Rule 703 states:

Each Participant must keep records of its trading on Tera, including records of its activity in the commodity underlying any Instrument and trading on related markets and make such records available, upon request, to Tera, the Regulatory Service Provider, and the CFTC.

This Rule provides TeraExchange with a critical tool it needs to properly monitor and investigate the market participant's trading activity in the underlying market. The ability of TeraExchange to obtain this essential information from the market participants pursuant to Rule 703, along with the Information Sharing Agreements, ensures that TeraExchange has sufficient access to information in order to investigate and enforce compliance with its Rules.

IV. Core Principle 7 – Financial Integrity of Transactions

Aside from proving their status as Eligible Contract Participants, participants must also demonstrate how it generally meets its financial obligations associated with entering into noncleared swaps by identifying one or more of the following categories, as applicable:

1. A written credit support agreement;
2. Pledged or segregated assets (including posting or receiving margin pursuant to a credit support agreement or otherwise);
3. A written third-party guarantee; and/or
4. The electing counterparty's available financial resources.

These are the form of acceptable credit arrangements provided by Congress and the Commission in respect of uncleared end-user transactions.

APPENDIX 1 OF EXHIBIT A

MASTER CONFIRMATION AGREEMENT FOR USD / BITCOIN NON-DELIVERABLE FORWARD TRANSACTIONS

This Master Confirmation Agreement for USD / Bitcoin Non-Deliverable Forward Transactions ("Master Confirmation") is by and among each party hereto (each, an "Adhering Party" and together, the "Adhering Parties"). Each Adhering Party wishes to facilitate the process of entering into and confirming USD / Bitcoin non-deliverable forward transactions with each other Adhering Party and agrees as follows:

1. **Application:** This Master Confirmation Agreement shall apply to each USD / Bitcoin non-deliverable forward transaction ("NDF Transaction") executed on TeraExchange, LLC ("TeraExchange") by two Adhering Parties, on or after the Effective Date, and is governed by the Rules of TeraExchange (the "Rules"). This Master Confirmation includes the Addendum to Master Confirmation ("Addendum"), which is attached hereto.
2. **Master Agreement:** This Master Confirmation incorporates by reference the 2002 ISDA Master Agreement, as if the Adhering Parties had executed an agreement in such form, (the "Master Agreement") and shall be bound thereto (A) without any Schedule except for the election of (1) the laws of the State of New York as the governing law, (2) for the purposes of Section 2(c) of the Master Agreement, "Multiple Transaction Payment Netting" will apply with respect to each NDF Transaction, and (3) United States dollars as the Termination Currency or Base Currency, as the case may be; and (B) with a 1994 ISDA Credit Support Annex (Security Interest - New York Law) ("CSA"), which shall be deemed to constitute a Credit Support Document, with the amendments stated in the attached Addendum. This Master Confirmation shall be deemed to supplement, form a part of, and be subject to the terms and conditions of the Master Agreement.
3. **Effective Date:** The Effective Date is the date upon which an Adhering Party executes the TeraExchange Exchange User License Agreement, and shall be the date on which a party will be bound to the terms of this Master Confirmation as an Adhering Party.
4. **Definitions:** Notwithstanding the fact that bitcoin is an asset and not a currency, this NDF Transaction will utilize to the extent necessary the definitions and provisions contained in the 1998 FX and Currency Option Definitions (including Annex A thereto), as published by the International Swaps and Derivatives Association, Inc., EMTA, Inc. ("EMTA") and the Foreign Exchange Committee, and as modified or amended in the Master Agreement (as defined in paragraph 2 above) (the "1998 Definitions"), are incorporated into this Master Confirmation. Any amendments or successor definitions to the 1998 Definitions are incorporated into this Master Confirmation with respect to each NDF Transaction that has a Trade Date that falls on or after the effective date of such amendments or successor definitions, and are referred to herein (together with the 1998 Definitions) as the FX Definitions. For the avoidance of doubt, if amendments or successor definitions to the 1998 Definitions become effective after the Trade Date of a NDF Transaction, such amendments or successor definitions shall not apply to or amend the terms of such NDF Transaction, unless otherwise agreed in writing by the Adhering Parties.

5. Transaction Confirmation: The Adhering Parties shall confirm the Economic Terms (as defined in paragraph 6 below) of each NDF Transaction in a confirmation (each such confirmation, a "Transaction Confirmation"). When an Adhering Party executes a NDF Transaction on TeraExchange, a Transaction Confirmation is automatically generated. An example of such Transaction Confirmation is attached hereto. Each Transaction Confirmation shall be deemed to incorporate and be subject to all of the terms of this Master Confirmation. This Master Confirmation, together with each Transaction Confirmation, constitutes a "Confirmation" as referred to in, and is subject to, the terms and conditions of the Master Agreement and the Rules.

6. Economic Terms: Each Transaction Confirmation shall specify the following terms ("Economic Terms"):

Trade Date
Reference Asset
Reference Asset Notional Amount
Notional Amount
Forward Rate
Reference Asset Buyer
Reference Asset Seller
Settlement Currency
Valuation Date
Settlement Date
Settlement

7. Priority:

(a) In the event of any inconsistency between the FX Definitions and a Transaction Confirmation, the Transaction Confirmation shall prevail. In the event of any inconsistency between the provisions of a Transaction Confirmation and the Master Agreement, the Transaction Confirmation shall prevail for the purpose of the relevant NDF Transaction.

(b) In the event of any inconsistency between the Addendum or a Transaction Confirmation and a Relevant EMTA Template, the Addendum or Transaction Confirmation shall prevail.

8. Representations:

Each Adhering Party will be deemed to represent to the other Adhering Party on the date on which it enters into a NDF Transaction that:

(a) This Master Confirmation is a legal, valid and binding obligation of each Adhering Party, enforceable against each Adhering Party in accordance with its terms.

(b) Absent a written agreement between the Adhering Parties that expressly imposes affirmative obligations to the contrary for that NDF Transaction: (i)(A) it is acting for its own account, and it has made its own independent decisions to enter into that NDF Transaction and as to whether that NDF Transaction is appropriate or proper for it based upon its own judgment and

upon advice from such advisors as it has deemed necessary; (B) it is not relying on any communications (written or oral) of the other Adhering Party as investment advice or as a recommendation to enter into that NDF Transaction, it being understood that information and explanations related to the terms and conditions of a NDF Transaction shall not be considered investment advice or a recommendation to enter into that NDF Transaction; and (C) it has not received from the other Adhering Party any assurance or guarantee as to the expected results of that NDF Transaction; (ii) it is capable of evaluating and understanding (on its own behalf or through independent professional advice), and understands and accepts, the terms, conditions and risks of that NDF Transaction; and (iii) the other Adhering Party is not acting as a fiduciary or an advisor for it in respect of that NDF Transaction.

(c) Each Adhering Party is an “eligible contract participant” (“ECP”), as such term is defined in Section 1a(18) of the Commodity Exchange Act, as amended.

(d) Each Adhering Party acknowledges that there are risks associated with an NDF Transaction that uses bitcoin, which is a relatively new and emerging asset, as the reference asset. The controlling documents of the NDF Transaction, which includes the Master Agreement, the Master Confirmation and Addendum, state each Adhering Party’s exclusive rights and obligations, including any recourse that may be available to it in order to enforce the terms of the NDF Transaction.

9. Calculation Agent: Unless otherwise specified in the applicable Rules of TeraExchange, the Calculation Agent for a NDF Transaction shall be both Adhering Parties. If the Adhering Parties are unable to agree on a determination within one (1) Local Business Day, each Adhering Party agrees to be bound by the determination of TeraExchange, who shall act as the substitute Calculation Agent, with the fees and expenses of such substitute Calculation Agent (if any) to be met equally by the parties.

10. Governing Law/Jurisdiction: This Master Confirmation shall be governed by the law, and the provisions on submission to jurisdiction, elected in the Master Agreement or the Addendum.

ADDENDUM TO MASTER CONFIRMATION

Part 1. Other Terms

(a) **Agreements of Reporting Party and Non-Reporting Party.** Unless otherwise required under CFTC Regulation 45.8, the Adhering Parties agree that, except with respect to terms reported by a Swap Execution Facility (“SEF”), the Reference Asset Seller will be designated the reporting counterparty (“**Reporting Party**”) with respect to each NDF Transaction. The Adhering Parties further covenant and agree that the Reporting Party is only responsible for the reporting obligations expressly placed on the Reporting Counterparty under the CFTC Regulations and is not responsible for such other reporting obligations that may be required of the other party directly under the CEA and the CFTC Regulations.

Part 2. Credit Support Annex Paragraph 12

Paragraph 12. Definitions is amended as follows:

“**Exposure**” means for any Valuation Date or other date for which Exposure is calculated and subject to Paragraph 5 in the case of a dispute, the amount, if any, that would be payable to an Adhering Party that is the Secured Party by the other Adhering Party (expressed as a positive number) or by an Adhering Party that is the Secured Party to the other Adhering Party (expressed as a negative number) pursuant to Section 6(e)(ii)(2)(A) of this Agreement as if all Transactions (or Swap Transactions) were being terminated as of the relevant Valuation Time; *provided* that Market Quotation will be determined by the Valuation Agent the following formula:

$$Exposure = Notional Amount \times \left(1 - \frac{Valuation Date Bitcoin Rate}{Forward Rate} \right)$$

Where:

“Notional Amount” is the size of the NDF Transaction expressed in USD.

“Valuation Date Bitcoin Rate” is the USD/Bitcoin rate, expressed as the amount of U.S. Dollar per one bitcoin reported by the Tera Bitcoin Price Index as of 5:00 PM New York time on the Valuation Date.

“Forward Rate” is the price of the contract expressed in USD per bitcoin.

Part 3. Credit Support Annex Paragraph 13

Paragraph 13. Elections and Variables is amended as follows:

- (a) **Security Interest for “Obligations.”** The term “**Obligations**” as used in this Annex includes the following additional obligations:

With respect to the Adhering Parties: None

(b) ***Credit Support Obligations***

(i) ***Delivery Amount, Return Amount and Credit Support Amount.***

(A) ***“Delivery Amount”*** has the meaning specified in Paragraph 3(a).

(B) ***“Return Amount”*** has the meaning specified in Paragraph 3(b).

(C) ***“Credit Support Amount”*** Means, for any Valuation Date, (i) the Secured Party’s Exposure for that Valuation Date plus (ii) the aggregate of all Independent Amounts applicable to the Pledgor, if any, minus (iii) the Pledgor’s Threshold; provided, however, that (x) in the case where the sum of the Independent Amounts applicable to the Pledgor exceeds zero, the Credit Support Amount will not be less than the sum of all Independent Amounts applicable to the Pledgor and (y) in all other cases, the Credit Support Amount will be deemed to be zero whenever the calculation of Credit Support Amount yields an amount less than zero.

(ii) ***Eligible Collateral.*** The following items will qualify as ***“Eligible Collateral”*** for both Adhering Parties:

	<u>Valuation Percentage</u>
(1) United States Dollars	100%
(2) Other Eligible Collateral as the parties may mutually agree from time to time.	As the Adhering Parties may mutually agree from time to time.

(iii) ***Other Eligible Support.*** The following items will qualify as ***“Other Eligible Support”*** for the Adhering Parties: None.

(iv) ***Thresholds.***

(A) ***“Independent Amount”*** means with respect to both Adhering Parties: 25% of the Notional Amount of the NDF Transaction, or any other amount specified in the Transaction Confirmation that is mutually agreed to by the Adhering Parties.

(B) ***“Threshold”*** means with respect to both Adhering Parties: zero, or any other amount specified in the Transaction Confirmation that is mutually agreed to by the Adhering Parties.

(C) ***“Minimum Transfer Amount”*** means with respect to both Adhering Parties: USD 10,000, or such other amount specified in the Transaction Confirmation or mutually agreed to by the Adhering Parties.

- (D) **“Rounding”** means the Delivery Amount will be rounded up and the Return Amount will be rounded down, as the case may be, to the nearest multiple of USD 1,000.

(c) **Valuation and Timing**

- (i) **“Valuation Agent”** means, for purposes of Paragraphs 3 and 5, the party making the demand under Paragraph 3 and, for purposes of Paragraph 6(d), the Secured Party receiving or deemed to receive the Distributions or the Interest Amount, as applicable, and for purposes of Paragraph 4(d), the Secured Party.
- (ii) **“Valuation Date”** means each day which is a Local Business Day in New York.
- (iii) **“Valuation Time”** means 5:00 p.m. New York time on the Local Business Day prior to the Valuation Date or date of calculation, as applicable; provided, however that the calculations of Value and Exposure will be made as of approximately the same time on the same date.
- (iv) **“Notification Time”** means 10:00 a.m. New York time on any Local Business Day provided, however, that, notwithstanding Paragraph 4(b), if a request for Transfer is made by the Notification Time, then the relevant Transfer shall be made not later than the close of business on such day and, if such request is received after the Notification Time, not later than the close of business on the next Local Business Day following such request.

- (d) **Conditions Precedent and Secured Party’s Rights and Remedies.** The following Termination Event(s) will be a “Specified Condition” for the Adhering Parties (that Adhering Party being the Affected Party if the Termination Event occurs with respect to that Adhering Party):

Illegality	☒
Tax Event	☐
Tax Event Upon Merger	☐
Credit Event Upon Merger	☒
Additional Termination Event(s)	☐
Force Majeure Event	☒

(e) **Substitution.**

- (i) **“Substitution Date”** has the meaning specified in Paragraph 4(d)(ii).
- (ii) **Consent.** If specified here as applicable, then the Pledgor must obtain the Secured Party’s consent for any substitution pursuant to Paragraph 4(d): Not applicable.

(f) **Dispute Resolution.**

- (i) **“Resolution Time”** means 10:00 a.m., New York time, on a Local Business Day,

following the date on which notice is given that gives rise to a dispute under Paragraph 5.

- (ii) **Value.** For the purpose of Paragraphs 5(i)(C) and 5(ii), the Value of Posted Credit Support other than Cash will be calculated as follows:

- (1) the mean of the closing bid prices quoted on the relevant date by three leading dealers in the Relevant Market chosen by the Valuation Agent; or

- (2) if no quotations are available from those leading dealers on the relevant date, the mean of the closing bid prices on the immediately preceding date.

- (iii) **Alternative.** The provisions of Paragraph 5 will apply.

(g) ***Holding and Using Posted Collateral.***

(i) ***Eligibility to Hold Posted Collateral – United States Dollars; Custodians.***

- (1) Each Adhering Party's Custodian will be entitled to hold Posted Collateral pursuant to Paragraph 6(b); provided that the following conditions applicable to it are satisfied:

- (A) The Adhering Party's Custodian (i) is not affiliated with it, (ii) is a trust company or commercial bank with trust powers, organized under the laws of the United States of America or any state thereof and subject to supervision or examination by federal or state authority, having a combined capital surplus of at least U.S. \$500,000,000 and (iii) shall have outstanding long term unsecured unsubordinated debt securities rated at least "A3" by Moody's and "A-" by S&P. Notwithstanding the aforementioned criteria, the Adhering Parties may mutually agree to a Custodian.

- (2) The Adhering Party's Custodian may be included in the Transaction Confirmation or in another communication between the Adhering Parties.

- (ii) ***Eligibility to Hold Posted Collateral – Other Eligible Collateral; Custodians.*** If the Adhering Parties mutually agree that Other Eligible Collateral may be used as Posted Collateral for purposes of Paragraph 6(b), the Adhering Parties will also mutually agree to a Custodian. In such case, the Custodian for each Adhering Party may be included in the Transaction Confirmation or in another communication between the Adhering Parties.

- (iii) ***Use of Posted Collateral.*** The provisions of Paragraph 6(c) will not apply to the Adhering Parties.

(h) ***Distributions and Interest Amount.***

- (i) ***Interest Rate.***

Interest with respect to U.S. Dollars will accrue from day to day at a rate equal to the "Federal

Funds Rate”, set forth in H.15 (519) for that day opposite the caption “Federal Funds (Effective)”, or such other rate as may be agreed by the Adhering Parties. If on any day such rate is not yet published in H.15 (519), the rate for such day will be the rate set forth in Bloomberg Screen page FEDL01<INDEX><HP><GO> for that day under the caption “FED FUNDS EFFECTIVE”, or such other rate as may be agreed by the Adhering Parties. If on any day, the appropriate rate for such day is not yet published in either H.15 (519) or Bloomberg Screen page FEDL01<INDEX><HP><GO>, the rate for such day will be the arithmetic mean of the rates for the last transaction in overnight U.S. Dollar Federal funds arranged by three leading brokers of U.S. Dollar Federal funds transactions in New York City selected in good faith by both Adhering Parties prior to 9.00 a.m., New York City time, on such day, or such other rate as may be agreed by the Adhering Parties.

For this purpose “H.15 (519)” shall have the meanings specified in the Annex to the 2006 Definitions as published by the International Swaps and Derivatives Association, Inc.

- (ii) ***Transfer of Interest Amount.*** The Transfer of the Interest Amount will be made on the last Local Business Day of each calendar month.
- (iii) ***Alternative to Interest Amount.*** The provisions of Paragraph 6(d)(ii) will apply.

Notwithstanding the above, the Adhering Parties along with the Custodian(s) may mutually agree in writing to modify the terms in this Section, *Distributions and Interest Amount*.

(i) ***Other Eligible Support and Other Posted Support.***

- (i) ***“Value”*** with respect to Other Eligible Support and Other Posted Support means: None.
- (ii) ***“Transfer”*** with respect to Other Eligible Support and Other Posted Support means: None.

- (j) ***Demands and Notices.*** All demands, specifications and notices under the Annex will be made to the contact information on file at TeraExchange.

(k) ***Amendment to Events of Default.***

- (i) Paragraph 7(i) is hereby amended by deleting the words “two Business Days” in the third line thereof and substituting the word “one Local Business Day”.

(l) ***Additions to Paragraph 3.*** The following subparagraph (c) is hereby added to Paragraph 3 of this Annex:

- (c) ***No offset.*** On any Valuation Date, if either (i) each Adhering Party is required to make a Transfer under Paragraph 3(a) or (ii) each Adhering Party is requested to make a Transfer under Paragraph 3(b), then the amounts of those obligations will not offset each other.

**TERAEXCHANGE TRANSACTION CONFIRMATION FOR
USD / BITCOIN NON-DELIVERABLE FORWARD TRANSACTION**

This Transaction Confirmation incorporates the Master Confirmation Agreement for USD/Bitcoin Non-Deliverable Forward Transactions and the documents referenced therein, including the 2002 ISDA Master Agreement, the 1994 ISDA Credit Support Annex and the 1998 FX and Currency Option Definitions as published by the International Swaps and Derivatives Association, Inc. EMTA, Inc. and the Foreign Exchange Committee, and the Addendum to Master Confirmation, subject to the following terms:

Definitions:	
"Bitcoin"	A digital asset based on the math-based protocols used by the decentralized, peer-to-peer Bitcoin computer network.
"Bitcoin Rate"	The rate used for a Valuation Date will be the USD/Bitcoin rate, expressed as the amount of U.S. Dollar per one bitcoin, as reported by the Tera Bitcoin Price Index (defined below), which appears on the TeraExchange platform as of 5:00 p.m. New York time on that Valuation Date. The "Tera Bitcoin Price Index" means the index described in the TeraExchange 2014-25, Part 40.2 submission for the USD/Bitcoin Non-Deliverable Forward Transaction, Exhibit B, Section C.
"Principal Financial Center"	New York
"Settlement Currency Amount" or "SCA"	Means an amount expressed in the Settlement Currency calculated on a formula basis as follows: SCA = (Notional Amount x (1 – Settlement Rate / Forward Rate))
General Terms	
Trade Date:	
Instrument ID:	
Symbol:	
Short Name:	
Name:	
Type:	
Sub-Type:	
Tenor:	
Reference Asset Buyer Order ID:	
Reference Asset Seller Order ID:	
Execution ID:	

USI:	
Forward Rate:	
Reference Asset:	Bitcoin
Notional Amount:	
Reference Asset Notional Amount:	
Reference Asset Buyer Name:	
Reference Asset Buyer LEI:	
Reference Asset Buyer Account:	
Reference Asset Seller Name:	
Reference Asset Seller LEI:	
Reference Asset Seller Account:	
Custodian for Reference Asset Buyer:	
Custodian for Reference Asset Seller:	
Independent Amount:	
Reporting Counterparty:	
Settlement Currency:	U.S. Dollars
Settlement Date:	_____, subject to adjustment if the Scheduled Valuation Date is adjusted in accordance with the Following Business Day Convention or if Valuation Postponement applies, and in each such case, the Settlement Date shall be as soon as practicable, but in no event later than two (2) Local Business Days after the date on which the Bitcoin Rate is determined.
Settlement:	Cash
Settlement Rate:	Bitcoin Rate
Valuation Date:	_____, ("Scheduled Valuation Date"), subject to adjustment in accordance with the Preceding Business Day Convention; and in the event of an Unscheduled Holiday, subject to adjustment in accordance with the Following Business Day Convention. Notwithstanding the foregoing, if the parties have specified a Scheduled Valuation Date that falls on a date that, as at the Trade Date, is not a scheduled Local Business Day in New York, no adjustment shall be made on account of the fact that such date is not a Local Business Day in New York.

Payments:	For the avoidance of doubt, the payment due on the Settlement Date shall be calculated in accordance with the formula set forth in the Settlement Currency Amount definition, pursuant to which: On the Settlement Date in respect of a Non-Deliverable Forward Transaction, (A) if the Settlement Currency Amount is a positive number, the Reference Asset Buyer will pay that amount in the Settlement Currency to the Reference Asset Seller or, (B) if the Settlement Currency Amount is a negative number, the Reference Asset Seller will pay the absolute value of that amount in the Settlement Currency to the Reference Asset Buyer, in each case subject to any applicable condition precedent and any applicable provisions of Article 5.
Price Source Disruption:	Applicable
Price Materiality:	Not Applicable
Disruption Fallbacks	
Valuation Postponement:	Applicable
Other Terms	
Unscheduled Holiday:	“Unscheduled Holiday” means a day is not a Local Business Day and the market was not aware of such fact (by means of a public announcement or by reference to other publicly available information) until a time later than 9:00 a.m. local time in the Principal Financial Center(s) of the Reference Asset two (2) Local Business Days prior to the Scheduled Valuation Date, as determined by the Calculation Agent.
Deferral Period for Unscheduled Holiday:	In the event the Scheduled Valuation Date becomes subject to the Following Business Day Convention, and if the Valuation Date has not occurred on or before the 30th consecutive day after the Scheduled Valuation Date (any such period being a “Deferral Period”), then the next day after the Deferral Period that would have been a Local Business Day but for the Unscheduled Holiday, shall be deemed to be the Valuation Date.

Valuation Postponement for Price Source Disruption:	“Valuation Postponement” means, for purposes of obtaining a Settlement Rate, that the Bitcoin Rate will be determined on the Local Business Day first succeeding the day on which the Price Source Disruption ceases to exist, as determined by the Calculation Agent, unless the Price Source Disruption continues to exist (measured from the date, that, but for the occurrence of the Price Source Disruption, would have been the Valuation Date) for a consecutive number of calendar days equal to the Maximum Days of Postponement. In such event, the Bitcoin Rate will be determined on the next Local Business Day after the Maximum Days of Postponement in accordance with the next applicable Disruption Fallback.
Cumulative Events:	Notwithstanding anything herein to the contrary, in no event shall the total number of consecutive calendar days during which either (i) valuation is deferred due to an Unscheduled Holiday, or (ii) a Valuation Postponement shall occur (or any combination of (i) and (ii)), exceed 30 consecutive calendar days in the aggregate. Accordingly, (x) if, upon the lapse of any such 30 day period, an Unscheduled Holiday shall have occurred or be continuing on the day following such period, then such day shall be deemed to be a Valuation Date, and (y) if, upon the lapse of any such 30 day period, a Price Source Disruption shall have occurred or be continuing on the day following such period, then Valuation Postponement shall not apply and the Bitcoin Rate shall be determined in accordance with the next Disruption Fallback.
Maximum Days of Postponement:	Thirty (30) calendar days
Relevant City for Business Day for Valuation Date:	New York
Relevant Cities for Business Day for Settlement Date:	New York

EXHIBIT B

Rule	Asset	Duration/Close Time	Action	Effective Date
4.4	Obligations of Market Makers	N/A	Exempt market makers from Bitcoin Binary Contract position limit stated in 12.20; remove “futures” from 4.4(d)(ii)	12/1/2014
12.20	Bitcoin Binary Contracts	Daily 3:00PM ET Close Time; Weekly 3:00PM ET Close Time	Add new Daily and Weekly Binary Contracts based on the underlying Tera Bitcoin Price Index	12/1/2014

EXHIBIT C

Addition of Rule 12.20, Amendment of Rule 4.4

(The following Rule amendments are underlined and deletions are stricken out)

RULES 1.1 – 4.3 [UNCHANGED]

RULE 4.4 OBLIGATIONS OF MARKET MAKERS

(a) General – Transactions of Market Makers should constitute a course of dealings reasonably calculated to contribute to the maintenance of a fair and orderly market, and Market Makers shall not make bids or offers or enter into transactions that are inconsistent with such a course of dealings. Ordinarily, Market Makers shall be obligated to do the following:

- (i) trade for the proprietary account of the Market Maker only;
- (ii) maintain at least the minimum capital on deposit with Nadex in accordance with the terms of the applicable Market Maker Agreement;
- (iii) comply with all other terms of the applicable Market Maker Agreement; and
- (iv) maintain two-sided displayed quotes of a minimum designated quantity (“Size”) within a predefined spread (“Bid/Ask Spread”) for a Series of Contracts for a certain period of time throughout the trading day in accordance with the terms of the applicable Market Maker Agreement.

(1) In ordinary market conditions, quotes must be made within a maximum Bid/Ask Spread.

(2) In fast market conditions, Market Makers will be permitted to refrain from quoting binding bid and offer prices, in accordance with the Market Maker Agreement.

(3) Market Makers will be permitted to reduce their size:

(A) in any Binary Contract within a Designated Class that is so deep in-the-money as to be valued at \$100 offer or so deep out-of-the-money as to be valued at zero bid and

(B) in any Variable Payout Contract within a Designated Class when the underlying for that Variable Payout

Contract is outside the range of the Variable Payout Contract.

(b) A Market Maker has a continuous obligation to engage, to a reasonable degree under the existing circumstances, in dealings for the account of the Market Maker when there exists, or it is reasonably anticipated that there will exist, a lack of price continuity or a temporary disparity between the supply of and demand for quotations in a Series of a Designated Class to which the Market Maker is appointed. Without limiting the foregoing, a Market Maker is expected to perform the following activities in the course of maintaining a fair and orderly market;

(i) To post bid and ask quotations in all Designated Classes to which the Market Maker is appointed that, absent changed market conditions, will be honored by the Market Maker.

(ii) To update quotations in response to changed market conditions in all Designated Classes to which the Market Maker is appointed.

(iii) All such Market Maker quotations shall be submitted as "Post-Only orders". In the event a Market Maker has built a position size equal to or greater than 90% of any applicable position limit in a particular Class or Contract, then that Market Maker may submit non-Post-Only orders (that is, traditional limit orders) in lieu of its quoting obligation for such Class or Contract until the Market Maker's position in such Class or Contract has been reduced to 75% of the applicable position limit, at which point the Market Maker's obligation to submit Post-Only orders will resume.

(iv) A Market Maker may submit non-Post-Only orders in markets to which the Market Maker has not been appointed and, provided the Market Maker continues to meet its obligations to continuously quote a two-sided market under the Market Maker Agreement and these Rules, in Designated Classes to which the Market Maker is appointed.

(c) Like other Members of Nadex, a Market Maker may not place an order to buy or sell a Contract in a Class unless it has the excess funds in its Nadex account necessary to fulfill its obligations under that order.

(d) Alternative Position Limits for Certain Binary Contracts

(i) Approved market makers who are engaged in bona fide market-making activity shall be exempt from the position limits for those Binary Contracts defined in

(1) Rules 12.20 (Bitcoin), 12.55 (Japan 225), 12.65 (Wall Street 30), 12.63 (US Tech 100), 12.59 (US 500) and 12.61 (US SmallCap 2000) of these Rules. Instead, such market makers shall be subject to Alternative Position Limits of twice the limit identified for such Binary Contract in Chapter 12. In addition, such Alternative Position Limits shall apply not to the entire class of Binary Contracts, but to each Binary Contract in that Class (i.e., per strike).

(2) Rules 12.3 (Copper), 12.5 (Gold), 12.7 (Silver), 12.9 (Crude Oil), 12.11 (Natural Gas), 12.49 (FTSE 100) and 12.51 (Germany 30) of these Rules. Instead, such market makers shall be subject to Alternative Position Limits of the limit identified for such Binary Contract in Chapter 12, which limit shall apply not to the entire class of Binary Contracts, but to each Binary Contract in that Class (i.e., per strike).

- (ii) A market maker taking advantage of this exemption and an Alternative Position Limit must, within 1 business day following a request by Nadex's Compliance Department, provide the Nadex Compliance Department with a trade register detailing all trading activity in any account owned or controlled by the market maker in the contract underlying a Binary Contract during the 15 minutes immediately before and after any expiration time identified by Nadex's Compliance Department in the request.

RULES 5.1 – 12.19 [UNCHANGED]

RULE 12.20 BITCOIN BINARY CONTRACTS

(a) SCOPE – These Rules shall apply to the Class of Contracts referred to as the Bitcoin Binary Contracts issued by Nadex.

(b) UNDERLYING – The Underlying for this Class of Contracts is the value of the bitcoin digital currency as indicated by the Tera[®] Bitcoin Price Index, calculated by the TeraExchange^{®15}.

(c) SOURCE AGENCY – The Source Agency is TeraExchange.

(d) TYPE – The Type of Contract is a Binary Contract.

(e) ISSUANCE – For each planned release by the Source Agency of the Underlying, Nadex will issue various Contracts, each of a different Series. A new issuance of Contracts will commence no later than two (2) business days following the Expiration Date.

¹⁵ TeraExchange[®] and Tera[®] Bitcoin Price Index are service and trademarks of Tera Advanced Technologies, LLC.

(f) PAYOUT CRITERION – The Payout Criterion for each Contract will be set by Nadex at the time the Binary Contracts are initially issued. For the Bitcoin Binary Contract, the Payout Criteria for the Contracts will be set as follows:

(i) WEEKLY BITCOIN BINARY CONTRACTS

- (1) EXPIRATION TIME – 3:00PM ET CLOSE
- (2) STRIKE INTERVAL WIDTH – The interval width between each strike level shall be 8.
- (3) NUMBER OF STRIKE LEVELS LISTED - Fifteen (15) strike levels will be listed for the Weekly Bitcoin Binary Contract Series.
- (4) STRIKE LEVELS GENERATED - Strike levels will be generated such that Binary Contract “W” is valued ‘at-the-money’ in relation to the Underlying market as determined by the Source Agency, immediately before the issuance of these Contracts, and shall be measured in U.S. cents rounded to the nearest one (1). Seven (7) strike levels will be generated above Binary Contract W at an interval of eight (8), and seven (7) strike levels will be generated below Binary Contract W at an interval of 8 (e.g. $W - 8$; W ; $W + 8$). The Contract will have a Payout Criterion of greater than the strike level value.

(ii) DAILY BITCOIN BINARY CONTRACTS

- (1) EXPIRATION TIME – 3:00PM ET CLOSE
- (2) STRIKE INTERVAL WIDTH – The interval width between each strike level shall be 1.5.
- (3) NUMBER OF STRIKE LEVELS LISTED - Twenty-one (21) strike levels will be listed for the Daily Bitcoin Binary Contract Series.
- (4) STRIKE LEVELS GENERATED - Strike levels will be generated such that Binary Contract “X” is valued ‘at-the-money’ in relation to the Underlying market as determined by the Source Agency, immediately before the issuance of these Contracts, and shall be measured in U.S. cents rounded to the nearest 0.5. Ten (10) strike levels will be generated above Binary Contract X at an interval of 1.5, and ten (10) strike levels will be generated below Binary Contract X at an interval of 1.5 (e.g. $X - 1.5$; X ; $X + 1.5$). The Contract will have a Payout Criterion of greater than the strike level value.

(iii) Nadex may list additional Bitcoin Binary Contracts with different ranges of Payout Criteria on a discretionary basis in accordance with the CEA and Commission Regulations.

(g) MINIMUM TICK – The Minimum Tick size for the Bitcoin Binary Contracts shall be \$0.25.

(i) POSITION LIMIT – The Position Limit for the Bitcoin Binary Contracts shall be 2,500 Contracts.

(j) LAST TRADING DATE – The Last Trading Date in a Series is the same date as the Expiration Date.

(k) SETTLEMENT DATE – The Settlement Date in a Series is the same date as the Expiration Date.

(l) EXPIRATION DATE – The Expiration Date of the Contract will be the date on which the Bitcoin Expiration Value is released by the Source Agency.

(m) SETTLEMENT VALUE – The Settlement Value is the amount paid to the holder of the in-the-money Contract on the Settlement Date. The Settlement Value of an in-the-money Bitcoin Binary Contract is \$100.

(n) EXPIRATION VALUE – The Expiration Value is the price or value of the bitcoin released by the Source Agency on the Expiration Date. The Expiration Value will be the last bitcoin value just prior to the close of trading of the Bitcoin Binary Contract as reported by the Tera Bitcoin Price Index, calculated by TeraExchange.

(o) CONTINGENCIES – If no daily settlement price of the relevant Tera Bitcoin Price Index is announced by the Source Agency, the Settlement Date will be delayed until such settlement price for that Series is released and publicly available.

RULES 12.21 - 12.78 [UNCHANGED]

End of Rulebook

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