

TeraExchange, LLC
Rule Implementation Submission 2018-03
March 15, 2018

1. The terms and conditions for the Bitcoin/Euro Swap (Exhibit A, which includes Appendix 1 of Exhibit A).
2. The intended listing date for the Bitcoin/Euro Swap is the next business day following the filing of this Submission.
3. A certification that: (a) Each Bitcoin/Euro 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 <https://teraexchange.com/Home/RulesNotesDocs>.
4. A concise explanation and analysis of the Bitcoin/Euro Swap’s compliance with applicable provisions of the Commodity Exchange Act, including the relevant Core Principles, and the Commission’s Regulations thereunder (Exhibit B).
5. There were no opposing views expressed regarding these amended rules.
6. Confidential treatment is requested for Appendix 2 of this Submission. A petition for confidential treatment is included herewith.



TeraExchange, LLC
P.O. Box 169
Summit, NJ 07901

March 15, 2018

BY ELECTRONIC MAIL: submissions@cftc.gov

TeraExchange Submission 2018-03

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

Re: TeraExchange Submission 2018-03: Listing of Bitcoin/Euro 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 Bitcoin/Euro Non-Deliverable Forward Transaction (“Bitcoin/Euro Swap”) for trading on its swap execution facility (“SEF”).

This submission letter includes the following:

- (a) The Submission cover sheet;
- (b) The terms and conditions for the Bitcoin/Euro Swap (Exhibit A, which includes Appendix 1 of Exhibit A);
- (c) A concise explanation and analysis of the Bitcoin/Euro 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) Appendix 2, “Tera Advanced Technologies Benchmark Indices, Bitcoin/Euro Index Guidelines & Methodology”, for which confidential treatment is requested. A petition for confidential treatment is included herewith.

Certifications

I hereby certify that each Bitcoin/Euro 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 <https://teraexchange.com/Home/RulesNotesDocs>.

Please contact the undersigned at crossman@teraexchange.com with any questions.

Sincerely,

Christopher Rossman

Christopher Rossman
Chief Compliance Officer

Exhibit A

TERAEXCHANGE, LLC

TERMS AND CONDITIONS OF THE

BTC / EUR NON-DELIVERABLE FORWARD TRANSACTION

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

- (a) The Bitcoin/Euro Swap shall be executed subject to TeraExchange's Rules, including Central Limit Order Book execution in accordance with TeraExchange Rule 506 or a Request-For-Quote procedure, in accordance with TeraExchange Rule 532.
- (b) The terms and conditions that apply to the Bitcoin/Euro Swap are generally as follows, as well as those included in Appendix A of Exhibit A below:

	Bitcoin/Euro Non-Deliverable Forward Transaction
	General
Contract Structure	A bilateral outright forward that is settled upon the difference between the contract price and the Tera BTC/EUR Benchmark Index
Clearing Venue	Bilateral
Contract Currency	Euro
Reference Asset	bitcoin
Settlement Currency	Euro
Quoting Convention	Euro per bitcoin
Price Increment	There is no minimum price increment
Minimum Notional Size	As determined by the parties
Minimum Notional Size Increment	As determined by the parties
Forward Rate	The Contract price is expressed as the amount of EUR 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 BTC/EUR Benchmark 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(k)

- (c) (i) In the request for, and response to, a Bitcoin/Euro Swap RFQ shall include a representation that the requestor or responder intends to meet its financial obligations associated with the transaction through:
 - (A) A written credit support agreement acceptable to the other party and submitted to TeraExchange prior to execution confirmation;

- (B) Pledged or segregated assets (including posting or receiving margin pursuant to a credit support arrangement such as an ISDA Credit Support Annex or similar agreement, or otherwise) 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 an RFQ is executed shall occur upon TeraExchange's receipt of the applicable credit terms of subparagraphs (A), (B) or (C) of paragraph (c)(i). No additional submission to TeraExchange is required prior to execution for transactions relying on subparagraph (D) of paragraph (c)(i) as the credit term.
- (d) By entering into a Bitcoin/Euro Swap on TeraExchange, the terms and conditions of the transaction shall include the following:
 - (i) The credit terms agreed under paragraph (c) of this rule;
 - (ii) The BTC / EUR Non-Deliverable Forward Transaction Confirmation; and
 - (iii) The Master Confirmation Agreement and Addendum to Master Confirmation Agreement for BTC / EUR Non-Deliverable Forward Transactions. Please see Appendix 1 of Exhibit A.

EXHIBIT B

CONCISE EXPLANATION OF COMPLIANCE WITH CORE PRINCIPLES

This exhibit includes a concise explanation and analysis of the certified Bitcoin/Euro 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 Bitcoin/Euro 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 518, Participants are prohibited from engaging in any conduct in violation of Applicable Law or the Rules.
- B. Under Rule 519, 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 520, 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 521);
- B. Market disruption, including violating bids and offers, closing period violations, and spoofing (Rules 522, 532);
- C. Market manipulation (Rule 524);
- D. Misstatements (Rule 525);
- E. Acts detrimental to the SEF (Rule 526);
- F. Misuse of the SEF (Rule 527);
- G. Withholding of orders (Rule 528);
- H. Trading against or crossing orders (Rule 529); and
- I. Disclosing orders (Rule 530).

TeraExchange's market regulation staff 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 Bitcoin/Euro Swap is a bilateral non-deliverable forward contract that is executed for a notional amount in which Euros are exchanged at contract expiration, on which the counterparties agree, to settle the difference between the forward rate in Euros per Bitcoin and the settlement rate in Euros per Bitcoin calculated using the “Tera BTC / Euro Benchmark Index” as the reference price.

The terms of the swap are determined with reference to the definitions contained in the 1998 FX and Currency Option Definitions (including Annex A thereto), as published by the International Swaps and Derivatives Association, Inc., and Emerging Markets Trading Association (“EMTA”). Under the standard terms of the Bitcoin/Euro Swap, the reference currency is Bitcoin, and settlement is in EUROS. The terms and conditions of the Bitcoin/Euro 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 Bitcoin/Euro Swap is reliable, acceptable, publicly available, and reported in a timely manner. On the Valuation Date, the contracted Bitcoin/EURO forward exchange rate is compared to the spot rate (“BTC Rate”), expressed as the amount of one BTC per EURO, as reported by the Tera BTC / Euro Benchmark Index, which appears on the TeraExchange web site (or other sources as defined) as of 5:00 p.m. New York time. The contract is net-settled in EUR such that:

Settlement Currency Amount = Notional value * (1-BTC Rate/BTC-EUR Forward 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.¹ If, for some reason, the Tera BTC / Euro Benchmark Index price is not available on the Valuation Date, TeraExchange will determine the price, 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 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 Postponement² applies.

TeraExchange will display the final settlement price on its website 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 asset 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.³ 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. 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.”⁴ 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.⁵ Accordingly, any member of

¹ 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 Business Day in New York, no adjustment shall be made on account of the fact that such date is not a Business Day in New York.

² “Valuation Postponement” means, for purposes of obtaining a Settlement Rate, that the Spot Rate will be determined on the 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 Spot Rate will be determined on the next Business Day after the Maximum Days of Postponement in accordance with the next applicable Disruption Fallback.

³ 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>.

⁴ 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.

⁵ 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.

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> or blockexplorer.com.

The supply of bitcoin appears technically limited since Bitcoin⁶ mandates that only 21 million bitcoins can ever be created by miners, and bitcoins will stop being produced as of 2140.⁷ 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.⁸ 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.

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 March 2018, the total market capitalization of outstanding bitcoins is valued at approximately \$154.8 billion. This is based on, per the blockchain, approximately 16,919,190 bitcoins in circulation multiplied by its present value. 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 245 countries, and more than 16,000 cities.⁹ Every day, over 200,000 unique transactions are recorded into the blockchain. Users can exchange bitcoins at over 190 different exchanges and can convert bitcoins into almost any fiat currencies.

C. Description and Analysis of Tera BTC / Euro Benchmark Index

“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 BTC / Euro Benchmark Index represents a globally-orientated, EURO-equivalent price for bitcoin. Since the Index is currently comprised of six (6) global bitcoin exchanges representing the majority of daily BTC/EUR spot trading dollar volume, the Tera BTC / Euro Benchmark Index accurately reflects the active underlying cash market. At the same time, the diversity of these exchanges, coupled with the Tera BTC / Euro Benchmark Index methodology, neutralizes the influence that any one exchange 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 Tera BTC / Euro Benchmark Index

⁶ 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>.

⁷ 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>.

⁸ The smallest fractional unit of a bitcoin is called a “satoshi” (0.00000001 bitcoin). See <https://en.bitcoin.it/wiki/FAQ>.

⁹ <https://localbitcoins.com/statistics>.

will be publicly available to market participants and is updated approximately every three (3) seconds.

The Tera BTC / Euro Benchmark Index is reflective of the underlying EUR 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 some of the largest, most utilized exchanges and subjecting their data to our filtering methodology, the Tera BTC / Euro Benchmark Index provides a reference that is indicative of the fair value of the spot price. In addition, the Tera BTC / Euro Benchmark Index acts as a price discovery tool for market participants to consider when valuing EUR bitcoin. It is for these reasons that it is likely that Tera BTC / Euro Benchmark Index will be met by market participants with a high level of acceptance because it is easy to demonstrate that it is reliable and not readily susceptible to manipulation.

The Tera BTC / Euro Benchmark Index is not readily susceptible to manipulation. The unique characteristics of the underlying cash markets in our data set, including its international span, publicly available block chain, and multiple means of access, make it difficult to manipulate. The Tera BTC / Euro Benchmark Index employs strict and objective criteria for the Index. The methodology employed is designed to ensure that only reliable, active and dependable exchanges are included. In order to consider an exchange for inclusion in the Tera BTC / Euro Benchmark Index, an exchange must at a minimum:

1. Serve an international customer base;
2. Provide at minimum a REST API with callable methods to receive 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 EUR;
5. Have daily trading volume that meets minimum acceptable levels as pre-determined by Tera;
6. Permit withdrawals and deposits of fiat currency within seven days and permit the transfer of bitcoin within 24 hours;
7. Meet certain operational criteria established by Tera, including operating an exchange for at least 6 months; and
8. Charge reasonable transaction fees (exchanges that charge zero fees are excluded).

These qualitative criteria, along with the actual exchanges that comprise the Tera BTC / Euro Benchmark Index, will be made available to the public. Once an exchange qualifies to participate in the Index, the Tera BTC / Euro Benchmark Index calculation methodology 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 transient events. The components of this analysis include:

Volume Weight Coefficient: The BTC/EUR Benchmark Index uses a 24-hour rolling average to calculate the weight coefficient assigned to each individual exchange. Although higher volume exchanges carry greater weight within the 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 data having no influence over the Index. The overall objective of this filtering process is to neutralize deviant pricing behavior and dampen the impact of individual exchange transient events.

Intra-Day Filter: The Tera BTC / Euro Benchmark Index enforces its filtering criteria intra-day and will remove those exchanges that no longer meet its criteria.

For a more detailed discussion regarding the calculation of the Tera BTC / Euro Benchmark Index price, please see Appendix 2, Bitcoin/Euro Index Guidelines & Methodology, attached hereto.

Finally, it should also be noted that off-exchange, peer-to-peer bitcoin trades that are privately negotiated have no impact on the Index.

The Tera BTC / Euro Benchmark Index is acceptable, publicly available, and timely. The Tera BTC / Euro Benchmark Index is published in EUR, is updated approximately every 3 seconds, and will be publicly available to the market participants. The Tera BTC / Euro Benchmark Index is readily accessible and available to the public for license.

In addition, TeraExchange is committed to implementing a strong market surveillance process that monitors the price activity at each exchange in the Tera BTC / Euro Benchmark Index. The purpose of this process is to identify any unusual or anomalous behavior. Since the Tera BTC / Euro Benchmark Index filters market data on a near real-time basis, Tera will be able to review the price activity at each underlying exchange and respond accordingly. This review includes, specifically, analyzing data that causes an exchange to be removed from the Tera BTC / Euro Benchmark 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, Tera will coordinate and confer with the exchange's senior management to discuss the matter. After this analysis, Tera may, as appropriate and if warranted, remove the exchange from the Tera BTC / Euro Benchmark Index.

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/Euro Price Index 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 calling live data from each exchange, it is able to monitor the underlying market in near real-time. Based upon its internal control protocols, certain data is flagged by TeraExchange and subject to closer scrutiny. In general terms, TeraExchange monitors a number of data points from the underlying market, including (1) price (bid and offer)

(2) volume and (3) connectivity. This Index Calculator software, which is operated on the server, is protected and cannot be modified without executive approval from the CEO or President of TeraExchange. If the data from an exchange triggers an alert based on the Index Calculator's static settings, an email is automatically sent to all members of the control team. 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 process 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 has implemented a strong market surveillance process that monitors the price activity of each exchange in the Index. In support of this effort, TeraExchange has established or 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, TeraExchange makes every effort to have each underlying bitcoin exchange contributing to the Index execute and maintain an Information Sharing Agreement or similar arrangement with TeraExchange, as applicable. The objective of such agreements is to provide TeraExchange with access to sufficient pricing information at the underlying markets to help it determine if such market was used to affect the Index. In addition, such arrangements allow for TeraExchange to share information with the CFTC.

TeraExchange also monitors each market participant's trading activity on the SEF. As part of its surveillance process, and in addition to the Information Sharing Agreements or similar arrangement, as applicable, the Rules of TeraExchange authorize it to obtain a market participant's trading activity in the underlying bitcoin market. Specifically, Rule 703 states:

As required by CFTC Regulation 37.404, each Participant, Customer or Account Holder of a Participant, or Authorized Trader must create and maintain records of its trading activity on Tera, including records of its activity in the commodity underlying any Instrument, activity in any index or instrument used as a reference price, and activity on related markets and must make such records available, upon request, to Tera, its agents, 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 or similar arrangements, as applicable, 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 BITCOIN/EURO NON-DELIVERABLE FORWARD TRANSACTIONS

This Master Confirmation Agreement for Bitcoin/Euro 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 Bitcoin/Euro non-deliverable forward transactions with each other Adhering Party and agrees as follows:

- 1. Application:** This Master Confirmation Agreement shall apply to each Bitcoin/Euro 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) Euros or United States dollars, as agreed to by the Adhering Parties, 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 Euros.

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

“Forward Rate” is the price of the contract expressed in Euro 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 or Euros	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 means an amount, if any, 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: EUR 5,000, 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 EUR 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	<input checked="" type="checkbox"/>
Tax Event	<input type="checkbox"/>
Tax Event Upon Merger	<input type="checkbox"/>
Credit Event Upon Merger	<input checked="" type="checkbox"/>
Additional Termination Event(s)	<input type="checkbox"/>
Force Majeure Event	<input checked="" type="checkbox"/>

(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 and (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. 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 Euros will accrue from day to day at a rate equal to the overnight rate set by the “European Central Bank”.

- (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
BITCOIN/EURO NON-DELIVERABLE FORWARD TRANSACTION**

This Transaction Confirmation incorporates the Master Confirmation Agreement for Bitcoin/Euro 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 Bitcoin/Euro rate, expressed as the amount of Euro per one bitcoin, as reported by the Tera BTC/EUR Benchmark Index, which appears on the TeraExchange platform as of 5:00 p.m. New York time on that Valuation Date. The “Tera BTC/EUR Benchmark Index” means the index described in the TeraExchange 2018-03, Part 40.2 submission for the Bitcoin/Euro 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:	Euros
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:	<p>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:</p> <p>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.</p>
Price Source Disruption:	Applicable
Price Materiality:	Not Applicable
Disruption Fallbacks	
Valuation Postponement:	Applicable
Other Terms	
Unscheduled Holiday:	<p>“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.</p>
Deferral Period for Unscheduled Holiday:	<p>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.</p>

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