DATA

DIGITAL ASSET TRANSFER AUTHORITY

15 July, 2015

Attn: ESMA Consultation Committee
European Securities and Markets Authority
103 rue de Grenelle
75345 Paris Cedex 07
France

Re: Call for Evidence on Virtual Currency Investment

Dear Members of ESMA Consultation Committee:

This letter is submitted on behalf of the Digital Asset Transfer Authority ("DATA") in response to the call for evidence on investment using virtual currency or distributed ledger technology issued by the European Securities and Markets Authority ("ESMA") on 22 April, 2015 (collectively, the "Call for Evidence")

Background

DATA is a global non-profit trade association established in July 2013 focused on digital assets, including distributed ledger technologies such as Bitcoin.[1] DATA was founded to (1) act as a conduit and feedback mechanism between the digital asset business community and policymakers and subject matter experts; (2) to inspire confidence in such products by spearheading the development of best practices across AML, data security, consumer protection and privacy; and (3) to evolve in compliance with applicable laws and regulation governing digital currencies including centralized and decentralized

---

[1] More information available at www.datauthority.org.

ledger technologies and emerging Internet protocols (referred to collectively herein as "digital assets"). Our members represent a broad range of digital asset businesses including currencies, exchanges, administrators, and payment platforms, as well as service providers such as established law firms that are actively engaged in the digital asset space.

General Comments

We appreciate the opportunity to provide comments to the Call for Evidence. We are encouraged by the efforts of ESMA to establish a broad understanding of existing and emerging technologies related to digital currency[2] firms. We applaud the collaborative approach taken by ESMA and hope to continue to have the ability to offer industry input into the process. We generally believe that research and commentary presented in the Call for Evidence is both nuanced and informed, offering a succinct overview on potential use cases for distributed ledgers and digital assets.

Several DATA member companies are registered as a money services business in North America, Asia or Europe and are seeking regulatory licensing. These companies face uncertainty as current regulatory frameworks for digital currency firms have not been fully established. Several European states including Luxembourg, the UK and Germany have discussed placing digital currency firms under existing money transmitter laws while others have tabled lighter touch rules for digital currency firms. In countries such as Russia, ownership of digital assets is discouraged. More guidance and uniformity in global frameworks is needed to allow these companies to operate efficiently across European borders, making Europe ideally positioned to lead global digital asset markets.

---

[2] For purposes of this letter, we use "digital currency" and "virtual currency" as interchangeable terms.

DATA

DIGITAL ASSET TRANSFER AUTHORITY

Listed below are comments and responses to questions outlined in the Call for evidence.

Q1.   Do you have any further information about any other VC investment product or platform distributing VC investment products, their location or size outstanding/volume?

The open-source availability of distributed ledger source code, coupled with robust venture capital investment (over €600 Million since 2013) is driving an innovation explosion in block chain and digital asset technologies. At last count, over 4,000 such digital assets exist, with 870 new digital asset companies listed on startup aggregator Angel List with an average valuation of $4.3 Million. Financial exchanges account for 186 companies with an average valuation of $5.6 Million each.

The five major assets in terms of market capitalization and trading volume are Bitcoin, Ripple, Litecoin, Ven and Dash. Of these, three use decentralized digital asset ledgers, while Ripple uses a federated ledger and Ven a centralized ledger. All of these technologies, and other "Bitcoin 2.0" ledgers including Counterparty, NXT, Eris, Ethereum and Bison, offer potential capability for the tagging of assets with representative values, allowing a variety of proxies representing non-digital assets to trade on the ledger. Beyond this, companies are working on a wide variety of Proof Ledgers, which aim to record diverse data onto block chains. Principle examples include those focused on identity, insurance, real estate, legal contracts, voting, auditing, procurement and IOT/machine transactions. DATA estimates the current size of the digital asset market to currently exceed €5 Billion, with an estimate of $1 Trillion expected by 2020.

An example of a CFD digital asset product is Ven (asset-backed, established 2007), listed in January 2014 on London's LMAX CFD forex exchange, where reported trade volume passed 500 Million Ven in the first twelve months. Ven is currently the largest traded digital asset on a regulated CFD exchange in Europe, but trading volume represents a tiny fraction of LMAX's £10 Billion a day in forex trading. Other exchanges, including the Luxembourg Exchange, London Metals Exchange and the London Stock Exchange have expressed interest in trading digital assets pending further review.

Hedge funds focused on digital assets have also arrived, including the Exante fund in Malta (AuM of $3.2 Million) and a fund in Jersey Isle of Man called "Global Advisors Bitcoin Investment Fund" (AuM of $6.6 Million). Both opened in 2014 and focus on Bitcoin.

In the US, NASDAQ recently announced the development of its own block chain for trading private company shares, in a new secondary marketplace being built following passage of the Jobs Act, which increases private company shareholder limits providing more potential private market liquidity in company shares prior to a public offering.

DATA believes digital assets represent an emerging "Digital Asset Class" and present opportunity for large new trading volumes on exchanges across Europe, greater financial inclusion and easier access to a greater diversity of financial tools for citizens, and a vector for the creation of new derivative products by legacy financial institutions.

2. Do you have any information about the profile of investors investing in VC investment products?

Digital assets are for everyone, and increasingly simple for anyone to hold directly through services such as Wallets and Vaults. As a simple asset token

DATA

DIGITAL ASSET TRANSFER AUTHORITY

purchase, technologies now allow millions of consumers around the world to simply hold or trade digital assets. In some cases, issuers and service companies are creating new AML/KYC and identity tools to track online purchase and exchange of digital assets. Regulated entities who launch digital asset investments tend to do so under existing money license or investment parameters. The US Internal Revenue Service designation of digital assets as an asset, with properties distinct from fiat money, helped to simplify the listing of such assets in accordance with other traded tokens, but the gray area of digital assets – from virtual online gaming points to fully liquid financial instruments, calls for nuance. In some markets, such as the aforementioned LMAX, users must be accredited investors at the institutional or professional level. On retail exchanges the entry requirements are often significantly lower. In July 2015, DATA released a set of global AML/KYC guidelines to guide its members on customer onboarding and maintenance best practices. These guidelines, along with work on security, privacy and consumer best practices, are available at http://hub.vg/DATA-Standards

3. Do you have anything to add or suggest a change to the description (paragraphs 15-18) of how virtual currency distributed ledgers work? Please clearly state to which virtual currency you are referring in your answer or whether your answer refers to virtual currencies in general.

While the explanation on the mechanics of VCs is succinct, we would offer a couple of observations about terms used inside the VC community regarding decentralized ledgers. An emerging view is of two major methods for establishing consensus on transactions: 'proof-of-stake' and 'proof-of-work'. **Proof-of-stake** is a method of securing a block chain network (such as those used for cryptocurrency) and achieving distributed consensus through requesting users to show ownership of a certain amount of currency. **Proof-**

of-work systems run difficult hashing algorithms to validate electronic transactions and divide into two types of protocols, Challenge-response – which mirrors ESMA's game example, and Solution-verification which requires more work on the part of the provider.

DATA also notes that centralized VCs, in which a ledger is maintained by a single entity with proof-of-work/stake auditing on a decentralized block chain, allow the transaction and the record of the transaction to be separated and can allow for unique uses relative to closed loop/local economies, such as corporate reward or government benefits issuance (Examples: Hullcoin, Bitgold, Ven).

4. Do you agree with the general investment process in VC based financial assets as described above (paragraphs 19-24)? Please explain where this process could differ for different virtual currencies.

The ecosystem flows outlined in the ESMA Call for Evidence are robust and clear. They could include the addition of service providers in the system who provide tax, compliance, auditing, insurance or other services on behalf of VC-based assets and securities. These would intersect in the diagram as User/Investor and Issuer linked Services. DATA expects "Replicators" and "Aggregators" will emerge as a bridge between decentralized token assets (such as commodities or securities) and traditional clearinghouses to ensure that complete records are maintained on legacy architectures as well as the new decentralized systems.

5. Which VC based financial assets exist other than the broad categories mentioned (paragraph 24)?

DIGITAL ASSET TRANSFER AUTHORITY

Clubs and Pools are emerging as a way to 'school' digital asset holders in particular directions, similar to a grouping of fish swimming together independently but as a unit, with market data determining the direction of movement. In such a scenario, a member pays a subscription or membership fee to get access to a group, with the value gained from the subscription or membership used to acquire assets on behalf of the Club. (Example: Hub Culture)

Crowd based insurance and derivatives are emerging – with forward swaps, tokenized ownership of physical assets, and real estate investment trusts using digital assets as the purchasing tool.

While not clearly expressed as a financial asset, block chain voting, in which citizens have one audited and public (yet potentially anonymous) vote on a particular matter is now possible, and can include a financial incentive for voting attached to the transaction ledger. BitCongress is creating a system for voting with "Votecoin" on the emerging Ethereum protocol to enable digital, verifiable digital democracy. In Denmark, the Liberal Alliance party is reportedly in favour of block chain voting.

6. Do you agree with the analogies to traditional regulated entities as outlined (paragraph 25-32)? Please explain where you have a different opinion, including where the analogies are different for different VCs.

The map provided in the Call for Evidence provides a helpful visualization of digital asset service categories relative to existing similar financial service categories. New elements that don't easily mirror legacy systems are also emerging, such as decentralized autonomous organizations or "DAOs". DAOs

enable swarms of participants to create entities on the block chain with no beneficial owner, set for simple or complex tasks that can be replicated by algorithms or machines and earn value in the form of digital assets for these efforts. Such mathematical or machine labors are already being used to pay ocean buoys for collecting wave data, automated trash management, and as incentives for micro-payments among AI agents in the cloud. Soon they will be the basis for payment networks between machines at the IOT level, enabling objects to behave like consumers and banks. A simple way to capture this concept might be to add "Machines" to the User/Investor category title.

7. Do you have more evidence on how widespread ownership of VC based financial assets/securities is? Please mention your sources.

The open source nature of digital asset technologies and protocols currently makes it difficult to measure the overall value of assets and value linked digital assets. Among DATA's 41 members, which account for the bulk of the existing digital asset industry leading companies, only a small proportion of assets are held relative to even the Bitcoin block chain, let alone the myriad of other coins, assets, asset-backed digital assets and ledgers that exist. Of the non-distributed ledgers, it is known that 10 Billion Ripple exist at a current unit market value of $0.0083, and 500 Million Ven have been exchanged since inception at a present unit value of €0.0852, with 99% of that volume traded in regulated exchanges where the necessary float reserve is small relative to the overall trading volume (>€1M).

8. Do you agree with the assessment of benefits and risks of VC based financial assets/securities or are there other benefits/risks for investors, for other market participants, and for the financial system as a whole?

There are a number of advantages digital assets offer relative to legacy financial systems. Speed and cost vary greatly and depend on the elements considered. In closed loop or centralized ledger digital asset systems, the effective cost of transactions is zero and the speed is instant, because there is not an outside clearing and settlement process for the ledger. The risk of these centralized systems is generally regarded as similar to the risk held today by banks and corporate reward balance sheets that maintain their own ledgers.

In distributed ledger systems, the cost to the consumer and the issuer may indeed be very low, but depending on the type of ledger, may incur significant or variable processing time and costs. For instance, while the size of block chains grow in a linear line they consume proportionally more energy for the consensus facility of the network to validate a transaction. Some estimates suggest that taking network energy costs into account can make the current cost of a Bitcoin transaction for the user is free if it is smaller in size than 1,000 bytes, but there are costs borne by the mining network and recovered in the value of the asset reward. Should the value of the asset decline based on a slump in demand or another price depressing factor, miners may be find the use of processing power for clearing transactions economically unviable, resulting in a downward spiral in mining demand and an increasing cost per remaining miner to clear transactions. This creates greater risk of a club of miners obtaining a consensus majority and being able to rewrite or fork transactions in the chain at will. Such scenarios have generally been overcome through increases in consensus efficiency that out-

pace the growth of corresponding block chains. The much discussed 'increase in block chain size' for Bitcoin which would allow additional information such as identity or contracts to be store on the block chain or side chains, has an impact on these processing power ratio issues. A mitigating factor to this is the public nature of block chains themselves, which can be monitored and audited by industry participants to ensure that any malfeasant action could be discovered should an attempt to rewrite the chain occur.

Another area of risk involves the transmission of public and private keys relative to the ownership of a digital asset over the Internet. While the private keys are designed to be held by the asset owner and can have multiple parties to ensure functions like escrow or security verification, it is less and less possible that these keys can be intercepted or stolen through a weakness in one part of the system or another. This generally represents a nodal, not systemic risk, much like the risk that exists today around cash. If someone steals your wallet, they are not damaging the integrity or value of the euros inside the wallet. As these technologies are extended into new asset classes like securities, commodities and physical contracts for goods, real estate and services, the block chains become more about identity and proof-of-ownership than about the actual asset that is the cryptographic code string. It's hard to walk away with a house.

9. How is the distributed ledger technology being used or likely to be used in relation to the issuance, distribution, trading, recording of transactions and ownership of 'traditional' securities or investment products and why?

Distributed ledger systems and virtual currencies will be used in a wide variety of ways and in formats we can't yet imagine related to traditional securities and investment products. They are likely to spawn a new set of assets that exist entirely in virtual worlds, especially as the coming onset of virtual reality environments take hold – creating entirely digital economies of goods and services – including jobs – in digital environments. Already, young people across the world earn a substantial living earning virtual gaming points, participating in gaming systems, recording content around gaming and more. As these systems begin to intersect with complicated in-world tasks, the possibilities for virtual jobs and wealth creation begin to exist – with the only borders being those we impose inside these virtual environments. For example, Project Entropia, the Swedish gaming platform, currently transacts over a billion virtual monetary transactions a month, with a real-money economy value of over €500 Million. Advanced economic services and facilities are certain to evolve in these gaming environments to offer citizens viable financial accrual and speculation options that do not exist in the current financial markets.

For existing traditional securities, equities, commodities and other traded assets, the potential to exchange assets in p2p formats, with directly available public ledgers, eliminates or reduces inefficiency, potential for error, and temptations for monopolistic control of public asset ledgers behind closed doors. While these legacy entities can and will operate around these systems, the space to create alternative asset ledgers with greater technical reliability and efficiency is necessary for continued productivity growth for the financial services industry at large. Governments themselves are likely to begin issuing fiat currency on block chains as a way to offer targeted services and use cases to citizens, and Europe's leadership in the development of local currencies

DATA

DIGITAL ASSET TRANSFER AUTHORITY

and community currencies, including Eurozone efforts for over 250 current pilots, points to a willingness to try solutions that make European lives better and more sustainable. Advances in compliance and AML/KYC techniques brought about by digital assets (HubID, One Name, Windhover Principles, DATA Standards) point the way to reduced cost and greater efficiency for all members of the financial services industry, with much greater safety and convenience for European consumers.

10. To what extent is the use of distributed ledger technology in relation to 'traditional' securities or investment products being separated from an associated virtual currency and if so how and why?

Block chain technologies enable companies, regulators and auditors to conduct real-time risk analysis of transactions with immutable data collection and auditability, which was previously technologically impossible. Furthermore, emerging innovations and practices in the ecosystem such as multi-signature (segregation in controls, granularity in corporate and treasury duties, impossibility of internal fraud, real-time transparency and auditability), the advent of proof-of-reserves methods (users can verify their balances online at platforms in real-time), and "continuous real-time accounting" may aid ESMA in their policy goals. Innovations in areas such as Big Data and the Internet of Things are facilitated by block chain technologies, which utilize smart contracts enabling automated interactions without human intervention, reducing transaction costs, and offer secure, efficient communication and payment networks.[3]

---

[3] *See* IBM ADEPT White Paper using block chain to show proof-of-concept for machine-to-machine interaction in the Internet of Things, available at
http://www.computerweekly.com/news/2240238627/IBM-uses-Bitcoin-technology-to-build-internet-of-things-platform.

DATA

DIGITAL ASSET TRANSFER AUTHORITY

These emerging innovations also directly bear on ESMA policy goals and ESMA should work with organizations like DATA to better understand the capabilities of these technologies. It is essential that policymakers understand that Internet and p2p technologies present unique challenges to oversight regimes historically based on centralized systems and gatekeepers, and that emerging technologies exacerbate the governance gap.

Conclusion

DATA is encouraged by the ESMA Call for Evidence and look forward to working with ESMA in creating space for leadership in the race to enhance productivity, refine efficiency and deliver transparency in financial services. Distributed ledgers and virtual currencies offer a substantial step forward in the growth of financial inclusion and safety for people everywhere. Regulatory clarity is needed for businesses to deliver this important technology to mainstream consumers.

If you have any questions, please feel free to contact me at 202-530-4821 or chris.mitchell@datauthority.org.

Sincerely,

Christopher Mitchell
Executive Director