



## EXHIBIT B

**Text from: UBS and the Utility Settlement Coin (Sept. 3, 2017)**

**Appearing at: <https://www.finextra.com/blogposting/14459/ubs-and-the-utility-settlement-coin> (screen shot included in Exhibit B as well, but text reproduced for better legibility)**

These are interesting times for blockchain and distributed ledger technology. My last blog of 23 August was about the Microsoft CoCo Platform (see: Microsoft CoCo Platform: blockchain game changer?) that could become an important trigger for further and more scaled blockchain adoption. And now it was recently announced that another six international banks have joined the UBS's big blockchain-led initiative, the so-called Utility Settlement Coin project or in short USC, which is intended to "smooth the way" for inter-bank settlements.

### **The USC project**

Already in September 2015 the Swiss bank UBS launched its first Utility Settlement Coin (USC) concept in collaboration with UK-based blockchain company Clearmatics. They were later joined (August 2016) on the project by BNY Mellon, Deutsche Bank, Santander, broker/dealer ICAP and the financial services firm NEX. Recently we saw the addition of Barclays, HSBC, State Street, Credit Suisse, MUFG and the Canadian Imperial Bank of Commerce.

*"They have joined at a time when the project shifts into the next stage of development"* Hyder Jaffrey, head of strategic investment and fintech innovation at UBS.

The idea is to develop a new, streamlined payment mechanism for institutional purposes, that could potentially replace clearinghouses and other intermediaries that sits between buyers and sellers of assets.

Swiss bank UBS is now leading a team of ten of the world's biggest banks aimed to create/develop a digital cash system to effectively process inter-bank transactions via blockchain or distributed ledger technology. This USC would allow financial markets to make payments and settle transactions quickly using blockchain technology, while minimising risks in the payments and settlement process. The idea is that exchanging the digital currency as payment for assets will be a more efficient means of exchange.

### **What is the Utility Settlement Coin or USC?**

The USC project in – in essence – aimed at making it easier for central banks to issue currencies on a blockchain. The USC project is designed to help prepare the way for central bank crypto currencies by making it easier for global banks to conduct a wide variety of transactions with each other using collateralised assets on a custom-based blockchain.

USC will act as a fully asset-backed digital cash instrument that would be cleared and settled via distributed ledger technology such as blockchain. It is the intention that the USC will be completely backed by cash assets through large banks and central banks. The USC will be a collateralized digital coin that banks could use to pay one another or to buy securities more quickly. Unlike bitcoin, the USC would not be its own cryptocurrency. It will be a digital cash equivalent of each of the major currencies backed by central banks, such as the dollar or euro, rather than a decentralized new digital currency such as bitcoin. It would act as a convertible stand-in for major currencies.

The USC would be convertible at parity with a bank deposit in the corresponding currency. Each settlement coin would represent fiat currency like euros and dollars on a one-to-one basis, and would thus be 100% backed by collateral at the domestic central bank. Spending a USC would be the same as spending the real currency it is paired with.

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### **What are the benefits?**

*“From reducing risk to improving capital efficiency in financial markets we see several benefits of this project,”* Barclays Investment Bank's Lee Braine .

The USC would use a blockchain-based distributed ledger to record transactions quickly and allow payment tokens to go straight to the owner of the asset being sold, rather than passing through clearinghouses. Blockchain thereby works as a “tamper-proof” shared ledger that can automatically process and settle transactions using computer algorithms, without the need for third-party verification.

*“Transfers and ownership could be settled instantly—the promise of blockchain technology”.* UBS

As it does not require manual processing, nor authentication through intermediaries, the technology can make payments faster, more reliable and easier to audit. And because the digital coins will be backed by cash at a central bank, which cannot default, the crypto tokens are free from credit risk.

### **Phased approach**

USB and its partners are taking a phased approach for preparing and implementing the USC. The group is now entering the third phase after having thought about the concept (Phase I) and legal and regulatory compliance issues surround decentralising the system (Phase II). That structural work is now almost completed. For now, the banks working on the USC are preparing to test transactions using it (Phase III), to work on the system's security and privacy, and to conduct further discussions with central banks.

### **Phase II: USC and regulation**

The group is in discussions with central banks and regulators. Such a form of digital cash will need to conform to regulatory requirements and be recognised and adopted widely by the markets. The discussions centre on improving data privacy and cyber security in order to appease regulatory concerns.

*“We have been in discussions with central banks and regulators and we will continue that over the next 12 months with the aim of a limited ‘go live’ at the back end of 2018.” “It raises questions, and possibilities, over a fundamental market structure principle: who can have access to central bank money and how.”* UBS

### **Phase III: testing phase**

The third phase of the USC project is the testing phase and will be the last before a live implementation. This newly commenced phase is expected to last for about 12 months. For that purpose the USC team has created a kind of testnet for the project that seeks to back crypto-tokens with collateral. Part of the group's third phase revealed the testing of a formal transfer of ownership and an accurate cash equivalents definition for the transfer in an effort to ‘mimic’ what a real-time end-to-end transaction between members would look like.

In that transfer test, the group will explore using a collateralised token, which could simplify the buying and selling of assets to a single, fiat-based transaction conducted on a blockchain, leaving clearing houses aside. In short, the collateralised tokens will be given directly to the owner of the asset, instead of going through the traditional network of clearing houses.

### **Phase IV: go-live**

The project involving UBS and other financial firms is far from complete.

UBS and the partnering banks are therefore aiming for a “limited go live” with the USC system at the end of next year. The first live collateralised token exchange using the USC platform could occur as soon as the end of 2018.

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### Open questions

There are a number of open questions, like whether the technology could handle the volume necessary for the scale of institutional markets run by big banks. Other issues include:

- How many USCs will be brought into circulation?
- Is USC going to work as a real centrally-led independent crypto currency with its own value?
- What will determine its value?
- Will or must central banks also going to use USC?
- Will USC be a competitor of Ripple's XRP or SETL Coin?

### The USC and central banks

What is special with the development of the USC is that this new crypto currency will not be created by a central bank. It will be an own internal p2p network for the realisation of cross border payments. The big question is: will or must central banks also going to use it?

*"USC could help eliminate a path forward for central bank digital currencies, one of the reasons HSBC joined to begin with." "It is a very great step forward in terms of going for more ambitious projects such as central bank digital currencies in the future."* Kaushalya Damasundaram, head of fintech partnership and strategy HSBC

### Competition or fragmentation

Another question is: will the USC increase competition between existing cryptocurrencies like Ripple's XRP, Ethereum's Ether, Litecoin, SETLCoin etc.

*"If banks of different digital asset groups want to settle trade with one another, they'll have to make markets between their unique digital assets or trade between their digital assets and a common fiat currency. What a mess!"* Brad Garlinghouse, Ripple Lab

Some said it could be that that in the end XRP will be chosen given that MUFG is partnering in both Ripple and the USC.

### Going forward

Main goal of the USC Project is wide sector adoption of the blockchain platforms that interoperate with each other. The USC will most likely be used in the interbank market to start with, enabling banks to repay each other in different currencies *"without having to go through the current cross-border settlement infrastructure and instead rely on the potentially more efficient DLT"*.

The next step will be to enable banks to settle securities transactions via the USC, however this will necessitate all the relevant securities to be transferred to blockchain systems to gain the settlement and verification benefits of the technology.

### Forward thinking

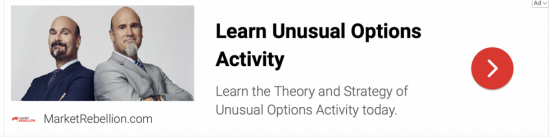
While the USC will be limited in scope from the start, the potential impact it could have in the future may be huge. According to its proponents the USC could play an important role in reforming the global financial system.

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*“Digital cash is a core component of a future financial market fabric based on blockchain technology”*,  
Hyder Jaffrey, UBS director of strategic investment and fintech innovation.

*“It may well inform the way central banks choose to move things forward.” “We see it as a stepping stone to a future where central banks issue their own (cryptocurrency) at some point.”* Hyder Jaffrey, UBS director of strategic investment and fintech innovation.

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## Utility Settlement Coin Aims to Set Industry Standard for Central Banking Digital Cash

CONTRIBUTOR: Bitcoin Magazine — Bitcoin Magazine PUBLISHED: AUG 25, 2016 12:39PM EDT



A group of major banks, UBS, Deutsche Bank, Santander and BNY Mellon, as well as the broker ICAP, have teamed up to develop a new form of digital cash that will help to set an industry standard to clear and settle financial trades over a distributed ledger.

In September 2015, *Bitcoin Magazine* reported that UBS was working on a prototype virtual currency to be used by banks and financial institutions as a basis to settle mainstream financial markets transactions. UBS, a Swiss global financial services company with its headquarters in Basel and Zürich, is the biggest Swiss bank and is considered the world's largest manager of private wealth assets, with more than 2.2 trillion Swiss francs (CHF) in invested assets.

The new virtual currency, dubbed "Utility Settlement Coin" (USC) would be used for post-trade settlements between financial institutions on private financial platforms built on blockchain technology and permit settlement of trades in seconds rather than days, with reduced risk and operational costs. To achieve this vision, UBS partnered with *Clearmatics*, a developer of "permissioned" blockchain technology. Permissioned blockchains, where only authorized operators can validate transactions are supported by banks and traditional financial operators: wary of the open, permissionless Bitcoin blockchain and the perception of its troublesome anarchy.

Now, UBS has joined forces with Deutsche Bank, Santander, BNY Mellon and ICAP to propose the USC to central banks, aiming for its first commercial launch by early 2018. "Cash is a leg to almost every trade, so this project is key to unlocking the benefits that the industry can gain from distributed automation technology in clearing, settlement and collateral management," said Clearmatics Founder and CEO Robert Sams.

The group will collectively build on the successful outcome of initial explorations of the USC concept, performed by UBS and Clearmatics, notes a joint press release issued by UBS, Deutsche Bank and ICAP.

"The focus of the work will consist of financial structuring of the USC and wider market structure implications as well as market integration points for a fully operational utility settlement coin for future use by institutions," states the release.

"Initially, Clearmatics is tasked with delivering early releases of the technology."

BitBoy Crypto. Along with making news & educational videos, Ben is into news website BitBoyCrypto.com.



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**Appearing at: <https://www.nasdaq.com/articles/utility-settlement-coin-aims-set-industry-standard-central-banking-digital-cash-2016-08-25>**

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Now, UBS has joined forces with Deutsche Bank, Santander, BNY Mellon and ICAP to propose the USC to central banks, aiming for its first commercial launch by early 2018. "Cash is a leg to almost every trade, so this project is key to unlocking the benefits that the industry can gain from distributed automation technology in clearing, settlement and collateral management," said Clearmatics Founder and CEO Robert Sams.

The group will collectively build on the successful outcome of initial explorations of the USC concept, performed by UBS and Clearmatics, notes a joint press release issued by [UBS](#) , [Deutsche Bank](#) and [ICAP](#) .

"The focus of the work will consist of financial structuring of the USC and wider market structure implications as well as market integration points for a fully operational utility settlement coin for future use by institutions," states the release. "Additionally, Clearmatics is tasked with delivering early releases of the technology platform to underpin the concept. Active dialogue with central banks and regulators will continue to ensure a regulation compliant, robust and efficient structure within which the USC can be deployed."

The USC is defined as an asset-backed digital cash instrument, implemented on distributed ledger technology and fully backed by cash assets held at a central bank, for use within global institutional financial markets. In September 2015, UBS and Clearmatics launched a first pilot

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project, part of the UBS Crypto 2.0 Pathfinder Program, to validate the USC concept. The successful conclusion of the pilot indicated that the USC project was ready for the introduction of additional partners.

"Digital cash is a core component of a future financial market fabric based on blockchain technologies," said Hyder Jaffrey, head of Strategic Investment & FinTech Innovation at UBS Investment Bank. "There are several digital cash models being explored across the Street. The Utility Settlement Coin is focussed on facilitating a new model for digital central bank cash."

It's especially interesting to speculate about the future of the USC and its potential to become a global standard electronic currency for settlements, adopted by major banks and financial operators. *The Financial Times* notes that banks are now exploring how they can exploit distributed ledger technology to speed up back-office settlement systems and free billions in capital tied up supporting trades on global markets. The total cost to the finance industry of clearing and settling trades is estimated at \$65 billion to \$80 billion a year.

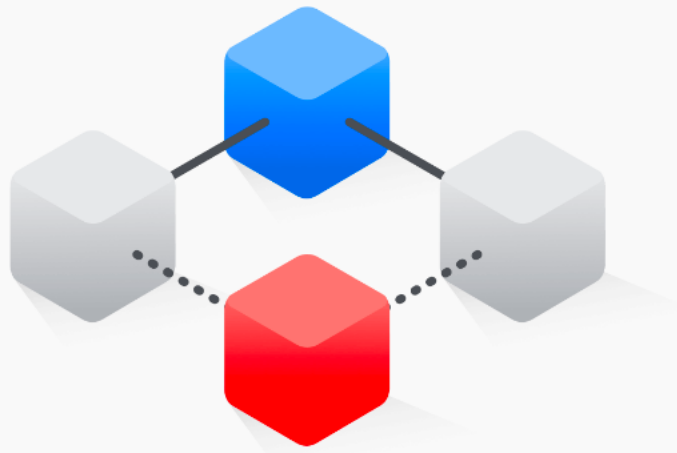
"Recent discussion of digital currencies by central banks and regulators has confirmed their potential significance," said Julio Faura, head of R&D at Santander. "The USC is an essential step towards a future financial market on distributed ledger technologies," Saket Sharma, head of Treasury Services Technology at BNY Mellon, added that the USC initiative provides "an exciting opportunity to work closely with other industry thought leaders and the regulatory community to explore the possibilities of this technology."

A Santander [press release](#) notes that the group is already in contact with central banks and regulatory authorities to ensure the launch of the USC in a solid and efficient framework that meets all regulatory requirements. Persuaded that blockchain-based digital cash represents the future of financial markets, the group is planning wider trial projects before the 2018 launch.

*The views and opinions expressed herein are the views and opinions of the author and do not necessarily reflect those of Nasdaq, Inc.*



## Our Mission



Founded in 2015, Clearmatics is a London-based blockchain company. We build member-owned and governed decentralised network platforms for the peer-to-peer exchange of tokenised value between network members. Our ethos and architecture is grounded in protocol, peer-to-peer architecture, removing friction and market inefficiencies, strong security guarantees and interoperable exchange across platforms to build a peer-to-peer ecosystem for market infrastructure. Our focus is capital markets; we work with firms that have the ambition to reinvent the industry's business models.

Our technology is p2p network platforms and protocol first - protocol suite, software that implements those protocols and provides client software and infrastructure for p2p networks. Its based on Ethereum and we call it Autonity - the protocol, the Geth-based client.

We use our technology to build p2p networks and dFMI.

P2p networks are private, member-owned and governed networks that enable peer-to-peer transfer of financial value and automation of contractual and fiduciary operations without reliance on trusted third-parties. Such decentralised networks can interact with one another, creating a wider ecosystem of value and leveraging the network effect, and they can form part of a dFMI.

dFMI is a new concept, one that builds on the security and resilience guarantees of distributed ledger and systems engineering to provide a platform for tokenising value and transferring its ownership between participants on that or, by cross-platform exchange, on other platforms.

We believe that our technology will drive adoption of a next-generation dFMI where intermediaries are removed, incentive structures encourage self-regulation, and risks are mitigated and reduced to the maximum. dFMI doesn't just provide a cryptographically secure environment for market participants to transact, it provides a peer-to-peer model that removes financial intermediaries and engenders a wider ecosystem for value transfer across platforms and pre- post-trade processes. dFMI works to mitigate concentration and liquidity risk, reduce settlement cycles to real-time, remove friction, and lower the transaction cost of economic exchange.

Clearmatics is a company with a strong belief in the open source movement and good ties to the Ethereum community. We also work closely with the Ethereum Foundation, and are an active member of the Ethereum Enterprise Alliance (EEA).



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# UBS and the Utility Settlement Coin

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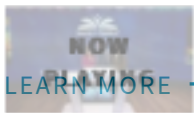
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