



Monetary Authority
of Singapore

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Banque de France and Monetary Authority of Singapore Break New Ground in CBDC Experimentation

First use of automated market making in m-CBDC experiment

The Banque de France (BdF) and the Monetary Authority of Singapore (MAS) today announced the successful completion of a wholesale cross-border payment and settlement experiment using central bank digital currency (CBDC). The experiment, supported by J.P. Morgan's Onyx, simulated cross-border transactions involving multiple CBDCs (m-CBDC) on a common network between Singapore and France. This experiment is one of the last of the Banque de France wholesale experiment program, which will be achieved by fall 2021, and is the first m-CBDC experiment that applied automated market making and liquidity management capabilities to reap cross-border payment and settlement efficiencies.

Cross border payments currently rely on correspondent bank arrangements that are subject to limited transparency on foreign exchange rates, restricted operating hours of payment infrastructures and currency settlement delays due to differences in time zones. To address these challenges, the experiment used a common m-CBDC network, aimed at facilitating cross border payments on a 24 x 7 real time basis.

The experiment simulated cross-border and cross-currency transactions for Singapore Dollar (SGD) CBDC and €uro (EUR) CBDC, and was conducted using a permissioned, privacy-enabled blockchain based on Quorum technology. Four key outcomes were achieved:

- The demonstration of interoperability across different types of cloud infrastructure.

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Blockchain nodes were set up across private and public cloud infrastructures in both countries.

- The design of a common m-CBDC network that enabled the two central banks to have visibility on cross border payments, while retaining independent control over the issuance and distribution of their own CBDC.

- The setup of an experimental m-CBDC network that incorporated automated liquidity pool and market-making service for EUR/SGD currency pairs. The use of smart contracts automatically managed the EUR/SGD currency exchange rate in line with real-time market transactions and demands.

- The simulation of an experimental m-CBDC network that showed that the number of correspondent banking parties involved in the payment chain for cross-border transactions can be reduced. Consequently, the number of contractual arrangements, the KYC (Know Your Customer) burden as well as the associated costs could be cut down.

While the experiment was limited to two central banks, the design of the m-CBDC network enables it to be scaled- up to support the participation of multiple centrals banks and commercial banks located in different jurisdictions. This offers great potential to simplify integration and significantly improve cost efficiencies, since a single connection to a common platform is used in place of multiple connections needed in the current correspondent banking model. This experiment is also one of the last of BdF's wholesale experiment programme, which will be achieved by fall 2021.

In a statement, Valérie Fasquelle, Director of Infrastructures, Innovation and Payments - Banque de France declared, *“By experimenting the circulation of EUR CBDC in a shared corridor network, Banque de France and MAS tested the possibility to provide a link with other CBDCs all over the world. It is an opportunity to construct arrangements for multiple CBDCs models, improving cross-border payments and increasing harmonization of post trade procedures.”*

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Sopnendu Mohanty, Chief FinTech Officer of MAS said, *“Building a multi-currency shared ledger infrastructure allows participants across countries to transact with each other directly in different currencies. This m-CBDC experiment has broken new ground by decentralizing financial infrastructure, to improve liquidity management and market making services. It charts the path for scalable CBDC networks where central banks and commercial banks can work together to achieve the vision of cheaper, safer and more efficient infrastructure for cross border payments.”*

“Participating in simulations which explore the technology and operational aspects of multi-currency corridor networks will be a foundational component of global payment infrastructure to come. This is a natural continuation of our work in the area of central bank and commercial bank digital currencies,” said Umar Farooq, CEO, Onyx by J.P. Morgan.

About the Banque de France

For more information: www.banque-france.fr

The Banque de France is a member of the Eurosystem, which groups together the European Central Bank and the national central banks of all countries that have adopted the euro. The Banque de France has three main missions: monetary strategy, financial stability and services to the economy. With regard to monetary strategy, the Banque de France plays a crucial role to prepare and implement the decisions of the ECB’s Governing Council; it plays a dual role of protection and supervision in conjunction with the French Prudential Supervision and Resolution Authority to ensure financial stability; it offers a wide range of services to companies and individuals.

About the Monetary Authority of Singapore

As Singapore’s central bank, the Monetary Authority of Singapore promotes sustained, non-inflationary economic growth through appropriate monetary policy formulation and close macroeconomic surveillance of emerging trends and potential vulnerabilities. It manages Singapore’s exchange rate, foreign reserves and liquidity in the banking sector. MAS is also an integrated supervisor overseeing all financial institutions in Singapore – banks, insurers, capital market intermediaries, financial advisors, and the financial market infrastructure. With its mandate to foster a sound and progressive financial services sector in Singapore, MAS also helps shape Singapore’s financial industry by promoting a strong corporate governance framework and close adherence to the international accounting standards. In addition, it spearheads retail investor education. MAS ensures that Singapore’s financial industry remains vibrant, dynamic and competitive by working closely with other government agencies and financial institutions to develop and promote Singapore as a regional and international financial centre. For more information, visit www.mas.gov.sg.

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