



Result of a Proof of Concept in New Interbank Settlement Platform Utilizing Blockchain Technology

Japanese Banks' Payment Clearing Network

March 18, 2019



Outline of the PoC

Objective

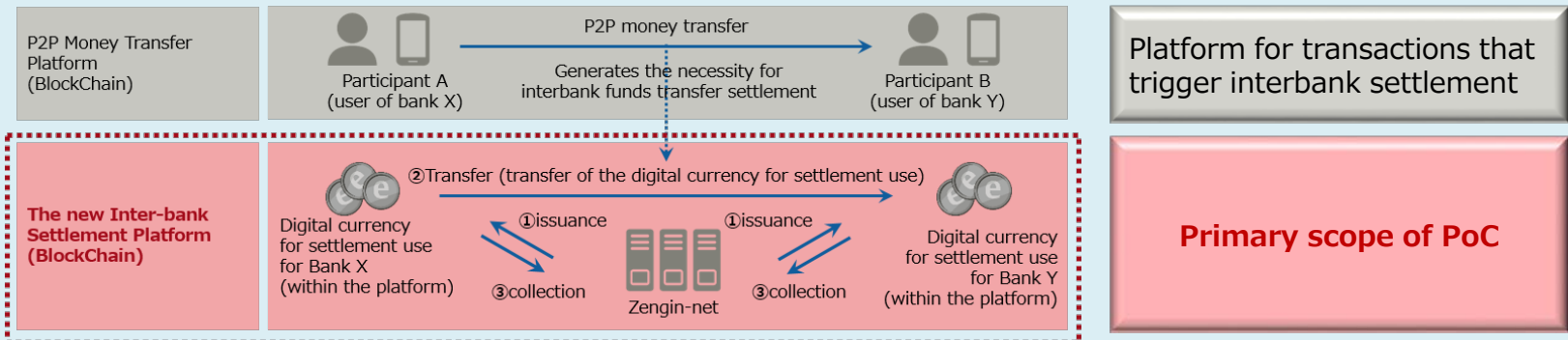
- To realize RTGS[※] of small-value payments by using blockchain technology on a new interbank settlement platform that utilizes digital currency.

※ Real-Time Gross Settlement. Settlement process that transfers funds for each transaction without settlement risk.

【PoC Overview】

The overview of the PoC is the following.

- ① Issuance** : Zengin-Net issues digital currency based on application from banks.
- ② Transfer** : Settlement is achieved by transferring digital currency between sender bank and receiver bank.
- ③ Collection** : Zengin-Net collects the digital currency based on application from banks.



Members

Participating Banks	Member banks of board of directors (Mizuho Bank, MUFG Bank, Sumitomo Mitsui Banking Corporation, Resona Bank, The Joyo Bank, THE BANK OF FUKUOKA, THE NISHI-NIPPON CITY BANK, Sumitomo Mitsui Trust Bank, The Keiyo Bank)	System Vender	Fujitsu Limited
		Support Vender	NTT DATA Corporation



Result

Overall conclusion

- We concluded that blockchain technology can be useful for RTGS in the new interbank settlement platform.

Summary results of functional and non-functional aspects

		What we assessed	Result	Remaining issues
Functional aspect		Whether the digital currency for interbank settlement appropriately functions in the RTGS	Processes(issuance/collection/transfer ,etc.)worked appropriately	○ To specify the details of functions considering actual operation
Non-functional aspect	Availability	Whether the structure ensures business continuity in the event of system failure	Business continuity capability ensured in the event of a single server failure and degraded operations of all servers	○ To consider performance decrement during degraded operation
	performance	Whether it is able to realize required response ^{※1} and throughput ^{※2} performance	Target throughput performance (1,000/sec) achieved	○ To minimize delay in checking balance (throughput reduction) when transaction volume increases
	security	Whether it ensures sufficient tamper-resistancy	Sufficient tamper-resistancy achieved	○ To enhance security measures considering actual operation

※1 The response time of the system. ※2 Volume of transactions processed per unit time.



Future Efforts

【Expected Roles of Zengin-Net】

- As an only funds clearing agency operating the payment and settlement system in Japan, Zengin-Net should continuously discuss the efficiency of "interbank settlement" which is a cooperative domain of the banking industry, and the next-generation payment and settlement infrastructure.

【Understanding of the environment】

- In that discussion, we should take into account changes of environment surrounding the Zengin-Net, such as the promotion of cashless across the country and the new services for person-to-person remittance and payment by various players.

【Future Efforts】

- Based on the above, in order to turn the knowledge and experience gained from this PoC into more concrete initiatives, we will continue to make an effort to discuss with the stakeholders about issues such as use cases in the "new interbank settlement platform".
- In addition, we will follow up on technical trends related to blockchain technology issues that have been revealed through PoC, and will also conduct research and study on important technical elements for discussing the aforementioned use cases such as API connections, etc.