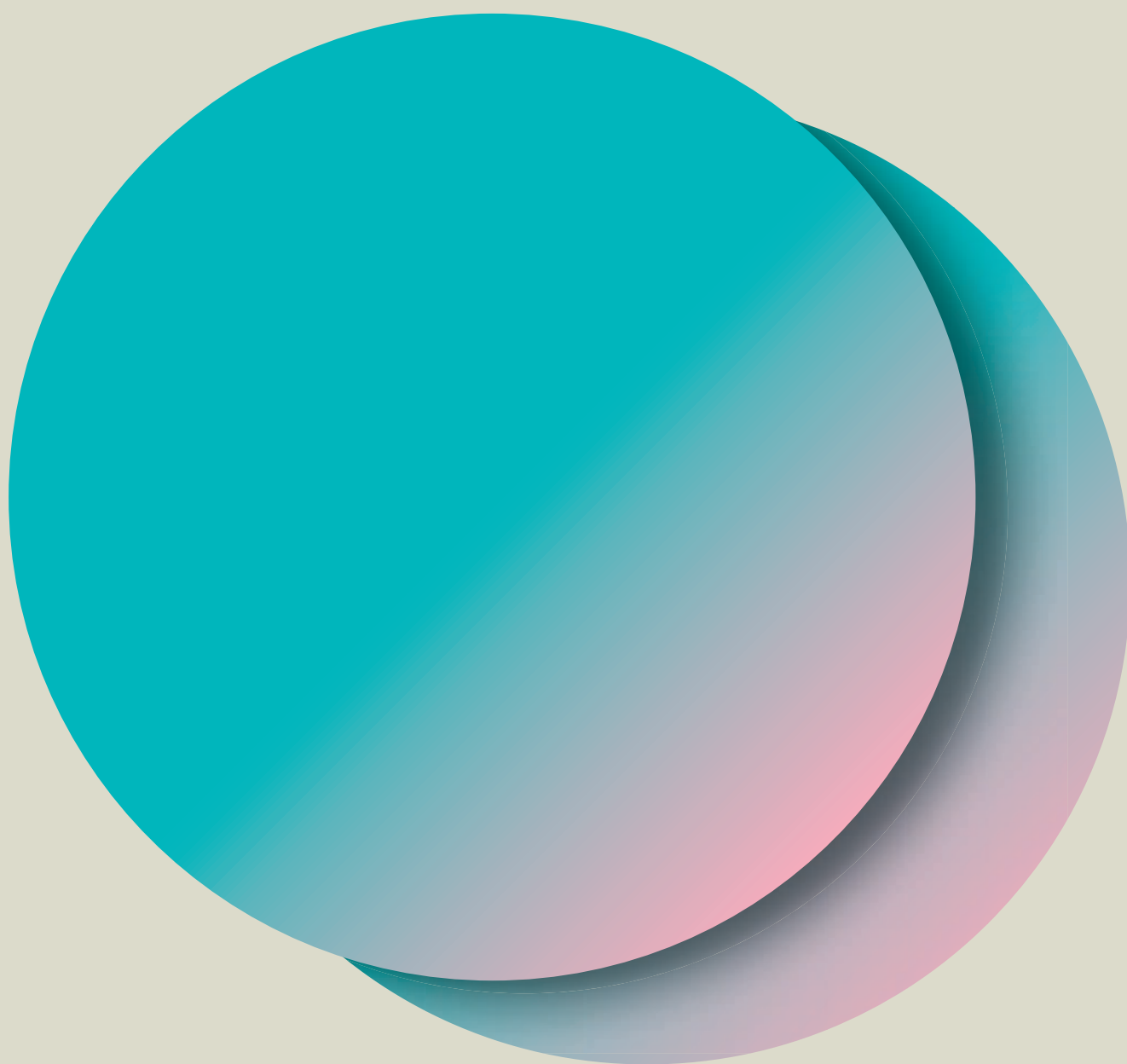




# Progress Report of the Digital Currency Forum

January 2023



Digital Currency Forum



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## About the name of the Digital Currency

The digital currency being developed by the Digital Currency Forum is tentatively called “DCJPY”. The Forum will continue considering how its digital currency should be entitled.



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# Introduction

The Digital Currency Forum was established in 2020 by leading Japanese companies and financial institutions in order to contribute to the development and to enhance the efficiency of the economy and industry through the digitalization of Japan's financial infrastructure. Since then, the number of companies participating in the Forum has steadily increased and now stands at 100.

The Digital Currency Forum publishes the details of its activities through "Progress Reports" from the viewpoint of ensuring the transparency of its activities, widely sharing the knowledge obtained, and contributing to the development of the economy and society. This is the second Progress Report, following the first report issued in November 2021.

This report focuses on describing the activities of each subcommittee, such as Proofs-of-Concept (PoC), desktop validations, and promotions based on implementation, which involved the participation of more than 40 companies, local governments, and organizations in the forum subcommittee use cases announced in the previous report.

Looking back at the economic and financial situation in 2022, as global inflationary pressures intensified, major developed countries took countermeasures such as raising interest rates. As interest rates on government bonds have risen, the price of crypto assets and stable coins that are not adequately backed up by assets value, has fallen sharply. Financial infrastructure helps economic entities deal with a variety of uncertainties and risks, but when payment and settlement methods themselves are unstable in terms of value, they cannot perform such intrinsic functions. Various asset market movements in 2022 have reminded us of this.

The digitalization of the economy is accelerating further in countries around the world including Japan. There is a growing demand for the use of information and data in various aspects, such as high value-added transactions and the revitalization of regional economy. In this context, there is a strong demand for payment and settlement instruments whose value is stable and which can take advantage of new technologies such as blockchain and distributed ledger technology and contribute to the use of information and data. Moreover, now decarbonization has become a global issue, and there is growing interest in carbon pricing and emissions trading. Decentralized digital technology is expected to be effective for facilitating transactions of various new assets including decarbonization-related assets.

The two-tiered digital currency platform DCJPY (tentative name), which the Digital Currency Forum is building, is expected to meet such needs of the economy and society. In order to stabilize the value in yen, DCJPY is preparing to issue digital currencies as bank deposits. Decentralized digital technology such as blockchain and distributed ledger technology can be incorporated in these digital currencies so that it can facilitate the utilization of information and data.



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Recently, various private entities in overseas are also making efforts to realize digital currency platforms that can stabilize the value in fiat currency such as USD and incorporate decentralized technology. Those initiatives include the Regulated Liability Network (RLN), which consists of banks and corporations in the United States, and Onyx operated by JPMorgan. Private initiatives to utilize new digital technologies to realize payment and settlement infrastructure that can facilitate sophisticated transactions efficiently and in a stable manner are expanding worldwide.

A number of countries are studying and making experiments about central bank digital currencies (CBDCs). The interest in CBDCs is also based on the needs of the economy and society to seek payment and settlement instruments whose value is stable and which can contribute to facilitating sophisticated transactions. In the studies on CBDCs, the importance of the role of the private sector in the payment and settlement infrastructure is more widely and deeply recognized. Although the pros and cons of issuing central bank digital currencies is still uncertain in most countries, each country has stated that cooperation and collaboration with the private sector is indispensable for building and operating payment and settlement infrastructure regardless of whether CBDCs are issued or not. Many countries also argue that private economic entities will continue to play a major role in payments and settlements.

DCJPY is designed to be able to coexist with CBDCs if they are issued. At the Digital Currency Forum, we will proactively work on what can be done by the private sector to achieve best-possible payment and settlement infrastructure, so that economic entities do not fall into the “wait-and-see” phase of deliberations on CBDCs and do not delay the digitalization of the financial infrastructure. We hope that discussions at the Forum and those on CBDCs bear positive synergies and lead to the innovation of Japan’s financial infrastructure.

The Digital Currency Forum will actively promote private initiatives to contribute to the digitalization of financial infrastructure and the development of the economy. We will share the knowledge obtained from these activities through progress reports and other communication tools, and contribute to digital innovation in an open manner. Through these efforts, we will make our best effort for upgrading Japan’s payment and settlement infrastructure into the most advanced in the world, which will be the prerequisite for the digital economy in the coming future.

**Hiromi Yamaoka**  
Chairperson,  
Digital Currency Forum





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## Part 1

# Past Activities of the Digital Currency Forum

- More than 40 companies, local governments, and organizations participated in the use cases implemented by the forum subcommittees announced in the previous report, and conducted PoCs and desktop validations including trial issuance by banks -

The Digital Currency Forum aims to achieve:

- (1) Innovation of payment infrastructure using digital technology**
- (2) Contribute to the promotion of digitalization of the Japanese economy as a whole and to the realization of various associated forms of value creation**
- (3) Digital Payment as a Service<sup>\*1</sup>**

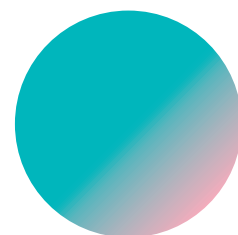
As such, the Digital Currency Forum started activities in December 2020 to take over the predecessor Digital Currency Study Group.

The circle of activities is expanding, and companies in industries such as ICT, digital securities, information and communications, railways, and manufacturing, as well as regional financial institutions and local governments, are increasingly making inquiries and asking to participate.

At present, the number of members of the Digital Currency Forum has increased from 74 in the previous report by 26, reaching 100 companies. A broad range of organizations including financial institutions, retail companies, transportation companies, information and communication companies, electric power companies, trading companies, local governments, ICT companies, railway companies, and manufacturing companies participate in the forum. These organizations participate in the Forum as they consider their own DX and new business creation.

In addition, continuing on from the Study Group, relevant Ministries and Agencies as well as the Bank of Japan have continued to participate as observers, and we are promoting initiatives for the social implementation of digital currencies under the all-Japan system.

<sup>\*1</sup> The ability of various business and economic activities to provide payment and settlement services as one of a wide range of services by incorporating the functions of digital currency in accordance with their respective needs.



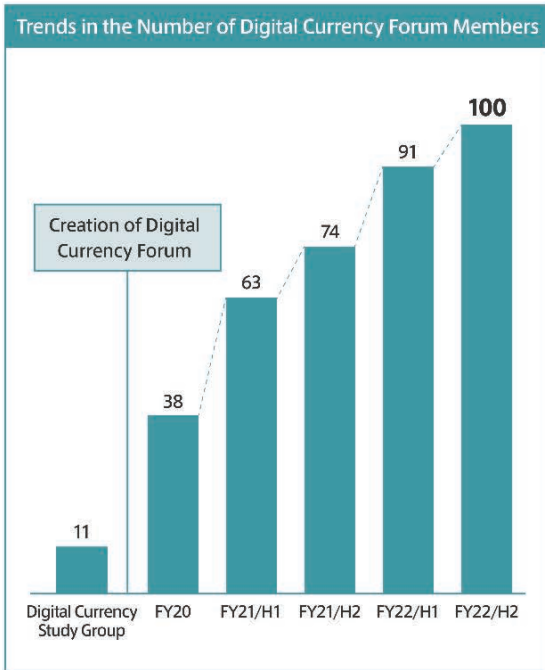


Figure 1: Trends in the Number of Digital Currency Forum Members

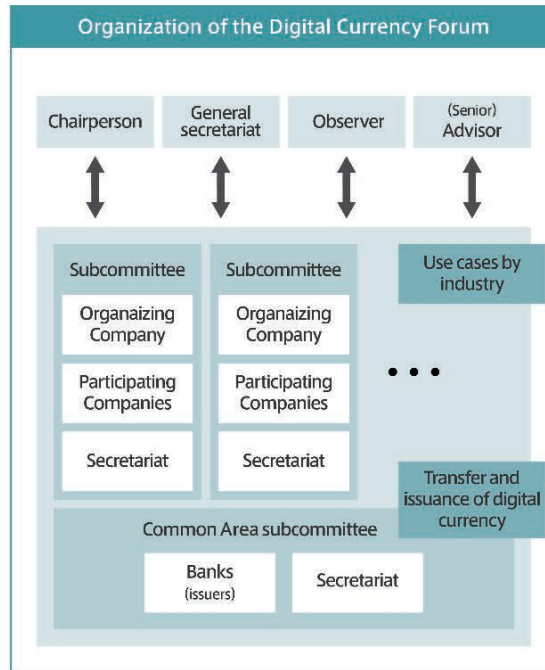


Figure 2: Organization of the Digital Currency Forum

The activities of the Digital Currency Forum are largely divided into two parts. The Common Area Subcommittee has been actively engaged in organizing workflows and requirements related to the transfer of funds, which is the core function of digital currencies. The various subcommittees have also been actively engaged separately in the study of the utility and use cases of digital currencies for specific issues in each industry and field, the study of security issues for the safe handling of digital currency platforms, and efforts to respond to various economic and social needs.

As a result of these activities, Proofs of Concept (hereinafter referred to as “PoCs”) and desktop validations were carried out for the use cases of each subcommittee published in the previous report<sup>\*2</sup>, and more than 40 companies (total number of participating companies) participated. In the PoCs of the Regional Coin Subcommittee and Administrative Affairs Subcommittee, banks were able to implement test issuance of the digital currency DCJPY (hereinafter referred to as “DCJPY”). Each subcommittee is taking advantage of the results and knowledge gained from the PoCs and desktop validations to make the study of the social implementation of digital currencies more concrete.

\*2 Progress report issued in 2021:  
[https://www.decurret-dcp.com/assets/forum\\_20211124pr\\_en.pdf](https://www.decurret-dcp.com/assets/forum_20211124pr_en.pdf)



## List of PoC and Desktop Validation in 2022

Subcommittee name		Participating companies	Overview
Regional Coin		TIS Inc., Mitsubishi UFJ Research and Consulting Co., Ltd., TOPPAN FORMS CO., LTD. and others	PoC pertaining to "the delivery of coupons using digital currency" assuming temporary special benefits for child-rearing households. Validate whether printing/ mailing/ individual settlement/ paper storage at municipalities, and paper aggregation/ submission/ funding at member stores using benefits will no longer be necessary if DCJPY is used to digitize benefits
Administrative Affairs			
Security Token Settlement Practice and System Study		Future Architect, Inc., Nomura Holdings, Inc. and others	A desktop validation was conducted for DVP* settlement between security tokens and digital currencies, and the results of the validation were summarized from three perspectives: business use case, technology, and challenges.
Electric Power Transaction	Subgroup A	The Kansai Electric Power Company, Incorporated and others	Purchase of products at convenience stores using DCJPY obtained from Electric Power Peer to Peer (P2P) transactions
	Subgroup B	ENERES Co., Ltd. and others	Joint demonstration (desktop validation) for promotion of decarbonization at small and medium-sized enterprises Use the electric power transaction platform to obtain, score, and visualize electric power transaction results and electric power purchase destination information using virtual data, and validate use cases for the deployment of new services utilizing them
Settlement in Industrial Distribution		Mitsubishi Corporation, NIPPON TELEGRAPH AND TELEPHONE CORPORATION and others	Validation of settlement by DCJPY using smart contracts, based on settlement of demurrage charges, etc. incurred in marine transport accompanying Mitsubishi Corporation transactions
Retail and Distribution		Seven Bank, Ltd. and others	Validate the effects of using blockchain technology for the series of business transactions from order to payment between retailers and wholesalers, and completing the transactions on the system while ensuring the authenticity of the data, for improved efficiency and sophistication of operations related to the supply chain.

\* An abbreviation of Delivery Versus Payment. A mechanism for simultaneously executing delivery of securities and payment of funds.

The main evaluations of DCJPY from PoC participants were as follows:

- Since programs such as use limitations can be incorporated in smart contracts in the Business Process Areas of the two-tiered platform, it can be confirmed that they can be used for specific measures by companies and local governments, and we want to consider commercialization.
- There was no major difference versus existing payment methods and usage, and it was easy to handle. Being able to connect to the digital currency platform without any technical problems was a big step forward.
- We did not feel much discomfort in using multiple applications such as the DCJPY issue/send/burn screen and wallet application.



- In inter-firm settlement, DCJPY is a deposit, so it can be cashed out immediately, and the accounting affairs/accounting of accounts receivable/payable can be made more efficient, so these significant labor savings can be expected.
- I was able to purchase products using DCJPY at a general store, and I could use the store terminal with my smartphone. We were able to confirm that there is no need for a dedicated terminal in the store while POS interlocking is something to consider as a future matter.
- In actual operation, it is necessary to select applications in consideration of normal business/UX (user experience).

Each subcommittee is taking advantage of the results and knowledge obtained by these PoCs in the operation of the subcommittee. The subcommittees that consider practical use are also considering use cases aimed at implementation and cooperation with stakeholders for the implementation, and are formulating plans for FY2023 onwards including these topics.

In the use case proposals, PoCs, and desktop validations being considered in each subcommittee, it was also confirmed that digital currency is not limited to being a settlement problem-solving tool as an alternative to cash, but will bring unprecedented added value to payment activities, enabling advancement from the stage where only the value of money is exchanged to the stage where information related to the payment and settlement in addition to the value as money (such as who bought the product, when, where, and what) is created, and money with new added values such as environmental value is created.

With such steady progress, DCJPY is also considering the use of digital currencies in a wide range of fields such as inter-firm settlement, supply chain, digital securities, regional revitalization, government, carbon neutrality, and mutual distribution in each field. From February to March 2023, DCJPY plans to implement PoCs in the Electric Power Transaction Subcommittee, Regional Coin Subcommittee, and Administrative Affairs Subcommittee. The third Progress Report, including the results report, and the white paper are scheduled to be published in the first half of 2023.

The Digital Currency Forum will continue to actively work with participating companies to digitize the role of all currencies and values and contribute to the creation of a prosperous society.







## History of the Digital Currency Forum

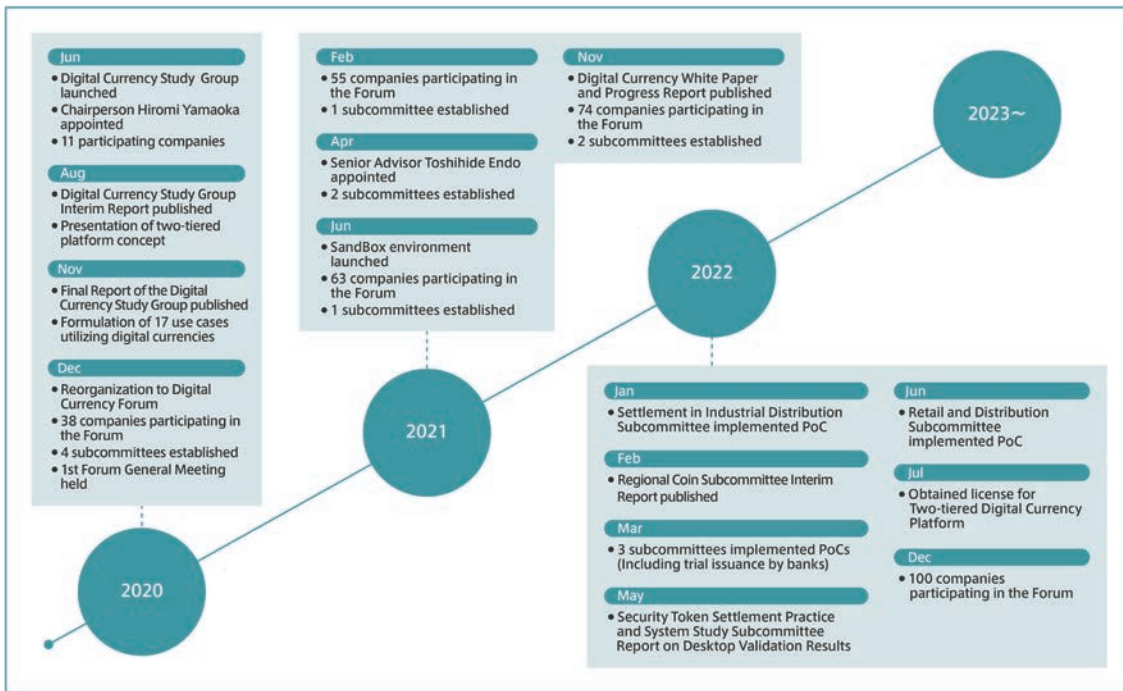


Figure 3: History of the Digital Currency Forum





## Part 2

# Two-tiered Digital Currency Platform

DeCurret DCP Inc., the secretariat of the Digital Currency Forum, is developing the two-tiered digital currency platform<sup>\*1</sup>, and obtained a patent for it (Patent No. 7089143) on June 14, 2022.

\*1 Reference: 2021 White Paper:  
[https://www.decurret-dcp.com/assets/forum\\_20211124wp\\_en.pdf](https://www.decurret-dcp.com/assets/forum_20211124wp_en.pdf)

As described in the “Past activities of the Digital Currency Forum” in the previous chapter, we have been able to confirm the practical needs and feasibility of this platform by conducting PoCs with business companies, including the test issuance of DCJPY by banks. Therefore, in FY2023, we are planning to conduct detailed validations for practical use, customer implementation preparations, and pre-implementation testing, and continue to work toward practical application in 2024.

We have summarized the basic structure of the platform such as architecture and infrastructure that organizes the specifications, business flows, and necessary functions such as various functions required for the issuance of DCJPY, and presented these to the private banks that are going to be issuing entities of DCJPY, as the connection specification<sup>\*2</sup>, and conducts specific consultations.

\*2 Overview of details

- Digital currency platform service overview
- Business process related diagrams
- Key business use case diagram
- Systematization business flow
- Business processing definition
- Screen image
- External interface
- Architecture
- Infrastructure
- Glossary

The Digital Currency Forum provides a Sandbox environment for forum participants to more specifically study the use of digital currencies in a wide range of fields, including inter-firm settlement, supply chain, digital securities, regional revitalization, government, and carbon neutrality.

As a prototype of the core functionality of the two-tiered digital currency platform, the Sandbox environment was developed and released in June 2021. Since then, the Sandbox environment has been updated in line with the development of the two-tiered digital currency platform, including the addition of an account signature generation tool and the addition of API request items by October 2022. The Sandbox environment provides an environment where almost all services in the Common and Business Process Areas provided by the two-tiered digital currency platform can be tested.

For more information on the two-tiered digital currency platform, we are planning to publish a white paper in the first half of FY2023, as well as Progress Report No. 3.



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## Part 3

# Concrete Steps Toward the Realization of Digital Currency

## [1] Electric Power Transaction Subcommittee

- Examining the digital currency usage model for carbon neutrality -

### Purchase of clean energy

The Electric Power Transaction Subcommittee of the Digital Currency Forum is examining new business models for decarbonization through the use of DCJPY for settlements associated with the purchase and sale of electricity, the automatic addition of proof that renewable electricity is being used, and proof of purchase of goods and use of services in stores using DCJPY obtained through the purchase and sale of electricity and environmental values.

By applying blockchain and distributed ledger technology, it will be possible to track how electricity is produced and how it is valued. The Electric Power Transaction Subcommittee has been studying the possibility of exchanging electricity from renewable energy sources for “electricity tokens” that are programmed to be able to purchase clean energy using the Business Process Area, thereby making energy procurement that is compatible with decarbonization more efficient.

This is expected to allow companies to choose and procure clean energy and to streamline the administrative work involved in such procurement. It will also be easier for them to prove that their corporate activities are consistent with carbon neutrality, and to expand into areas of corporate financing such as green finance. These efforts will become even more important in the near future as countries, including Japan, work toward achieving carbon neutrality.

### Specific use case:

#### Use of digital currency in a peer to peer “P2P” electricity trading

Since November 2019, the end of feed-in-tariffs (“post-FIT”) and lower prices for solar power have accelerated discussions on electricity trading and environmental value trading. In this context, there is a growing interest in Peer to Peer (“P2P”) platforms that match power generators (hereafter, “prosumers”) with consumers (hereafter, “consumers”), and in the creation of new businesses through the use of electricity data.

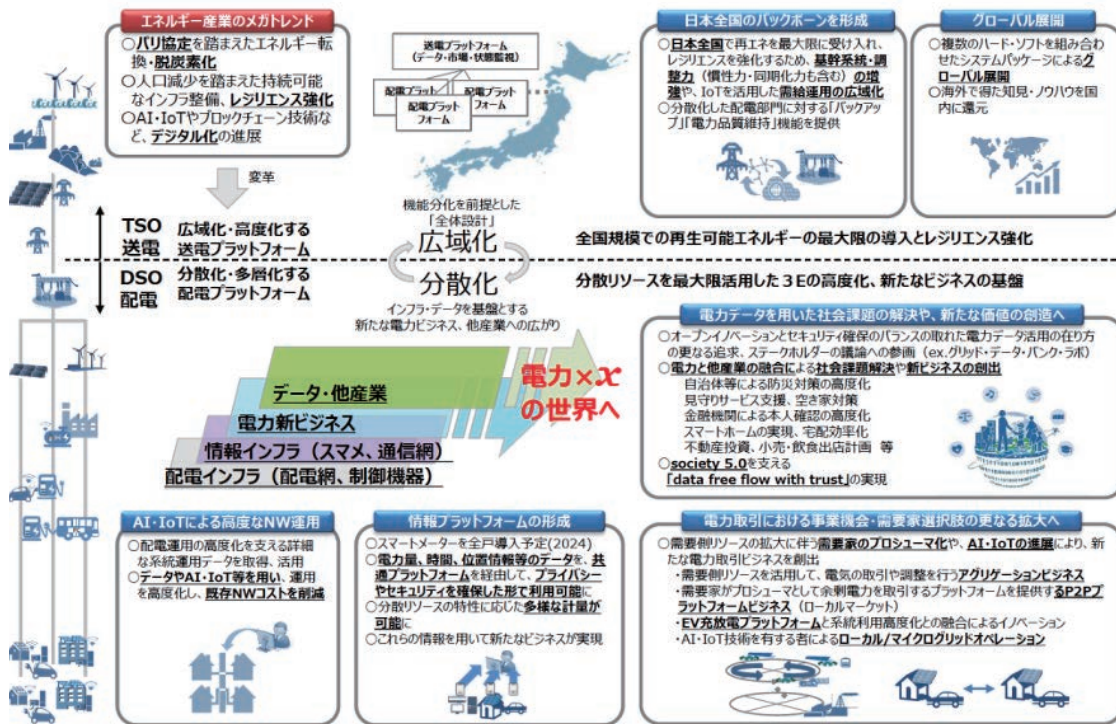


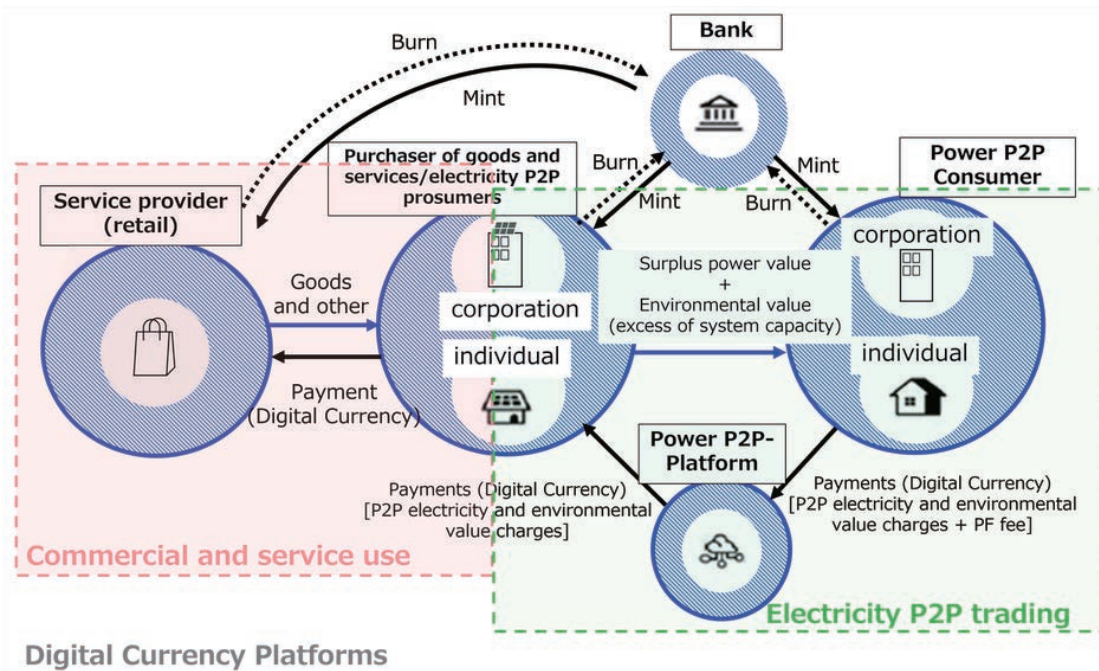
Figure 4: Future vision of electric power platform using next-generation technologies

Source: Ministry of Economy, Trade and Industry, "8th Study Group on New Electric Power Platform Using Next-Generation Technologies" (Japanese version only)

In the use of P2P platforms, the key is to have an efficient mechanism for settling the price associated with the purchase and sale of electricity and environmental value. In this respect, the use of DCJPY, which is programmable, is expected to make it possible to "purchase electricity that meets certain requirements and settle it automatically," thereby increasing the efficiency of trading operations.

The Electric Power Transaction Subcommittee of the Digital Currency Forum is exploring a mechanism to use yen-denominated bank-issued digital currency for the trading of electricity and environmental value on the electricity P2P trading platform to make payments seamless in real time.

In FY2021, it demonstrated the use of digital currency as a means of payment and settlement for P2P electricity and environmental value transactions, and the use case of digital currency earned by prosumers as income through trading for payment and settlement of product purchases.



### Digital Currency Platforms

Figure 5: Proof-of-Concept for using digital currency for electricity P2P trading

In order to seamlessly settle electricity P2P transactions in digital currency, real-time payment of consideration is realized by linking the electricity and environmental value P2P trading platform and the digital currency platform with an API.

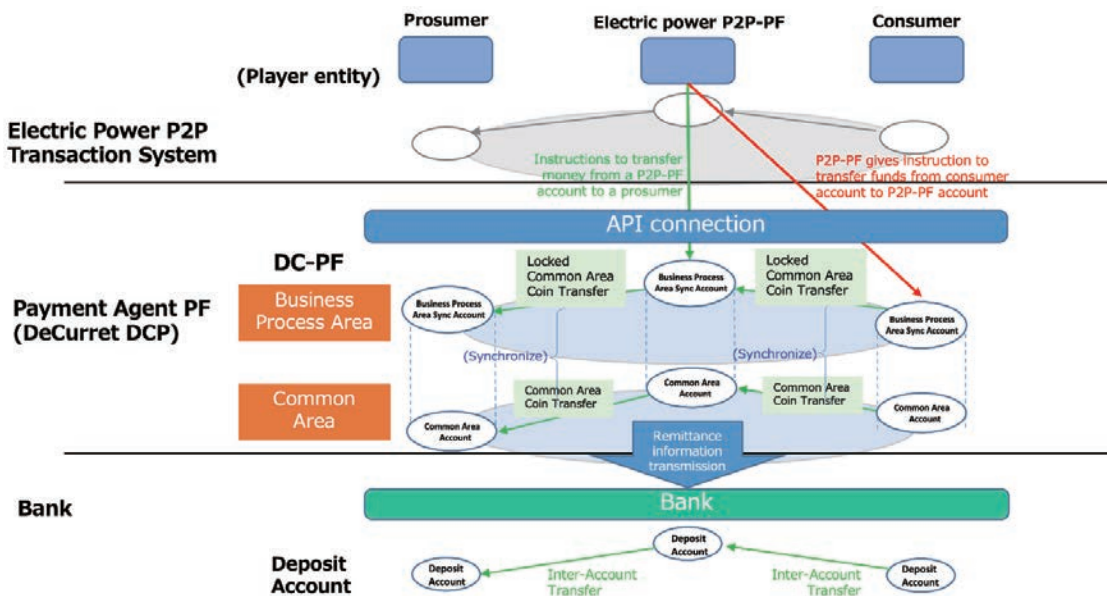


Figure 6: Linkage diagram between electricity P2P trading system and digital currency settlement system



In addition, for the purchase of goods based on the income from electricity trading, the subcommittee has demonstrated that a prosumer can actually purchase goods at a convenience store and make payments in digital currency. In order to do this with DCJPY, the prosumer needs to issue a “Common Area Coin (a deposit in the Common Area, a digital currency entity)” from his or her own “bank deposit”, and mutually convert the “Common Area Coin” and “Business Process Area Coin (a token that poses as a Common Area Coin in the Business Process Area)” at the time of product purchase. These functions have been realized on smartphones using the “Business Process Area App” provided by DeCurret DCP Inc.



Figure 7: Photos of product purchases, digital currency payments, and settlement demonstrations

By demonstrating the application of digital currencies to the settlement of electricity and environmental value transactions and the purchase of goods through the income generated, it will be possible to develop the scheme in the future and develop various complex services beyond the boundaries of the industry. Since payments and settlements are recorded through the transfer of digital currencies, it is also expected that it will be possible to prove the efforts towards carbon neutrality on the part of those who procure electricity and environmental value, and to award points according to environmental value.

### Use of electricity transaction data for green finance

In addition, the Electric Power Transaction Subcommittee of the Digital Currency Forum is studying use cases in which data on renewable energy and environmental values acquired by consumers of electricity is used for the business and financing of the companies concerned.

For example, it may be possible to accumulate electricity transactions from renewable energy, environmental value, and elements that are environmentally friendly on a blockchain and use them for financial aspects such as fundraising.

In FY2021, the subcommittee used virtual data to obtain, score, and visualize electricity transaction results and electricity supplier information, and validated use cases utilizing them. This scheme uses the electricity transaction platform developed by ENERES Co., Ltd. and validates the support in terms of information and correspondence resources and financial support. In order to use virtual data, virtual numerical values are also used for evaluation.



## [Implementation Details]

- (1) Consumers (assuming small and medium-sized enterprises) acquire electricity transaction performance data, as well as power source type, power generation area, and power plant information of the supplier
- (2) Scoring based on electricity transaction performance data and supplier information is performed to visualize the environmental impact, sustainability, additionality, and regionality
- (3) Based on the evaluation of SMEs' renewable energy purchase performance and supplier, financial service providers will consider the possibility of providing financial services such as loans
- (4) Also add carbon neutral information such as renewable energy usage rate to products

As a specific usage method, banks could use such data to evaluate the decarbonization efforts of the companies they lend to and reflect this outcome in the terms of their loans. It is also possible to evaluate decarbonization efforts in the value chain, such as the contribution to decarbonization of the products procured by the lending company and the companies with which the lending company does business. These data are also expected to provide useful information to consumers in their evaluation of a company's products and services.

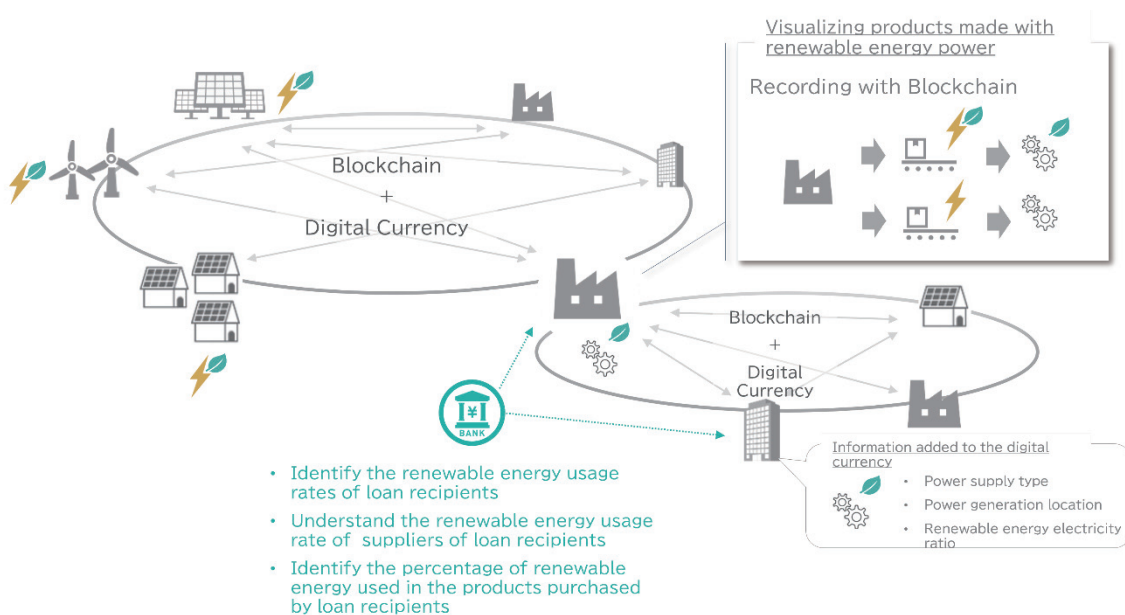


Figure 8: Proof-of-Concept scheme to apply electricity trading records to financial business

In FY2021, the subcommittee was able to validate the use cases that utilize electricity transaction data, and is studying the materialization of these use cases in FY2022. In particular, we hope that it will be possible to create a cycle that promotes the decarbonization of companies with financial services and creates consumers' own decarbonization actions using electricity transaction performance data as a key.



The subcommittee will continue to study business models using DCJPY, with a focus on The Kansai Electric Power Company, INC. and ENERES Co., Ltd., and will continue to promote the integration of DX (Digital Transformation) and GX (Green Transformation) in the energy field, aiming to develop practical services for corporate carbon neutral support.

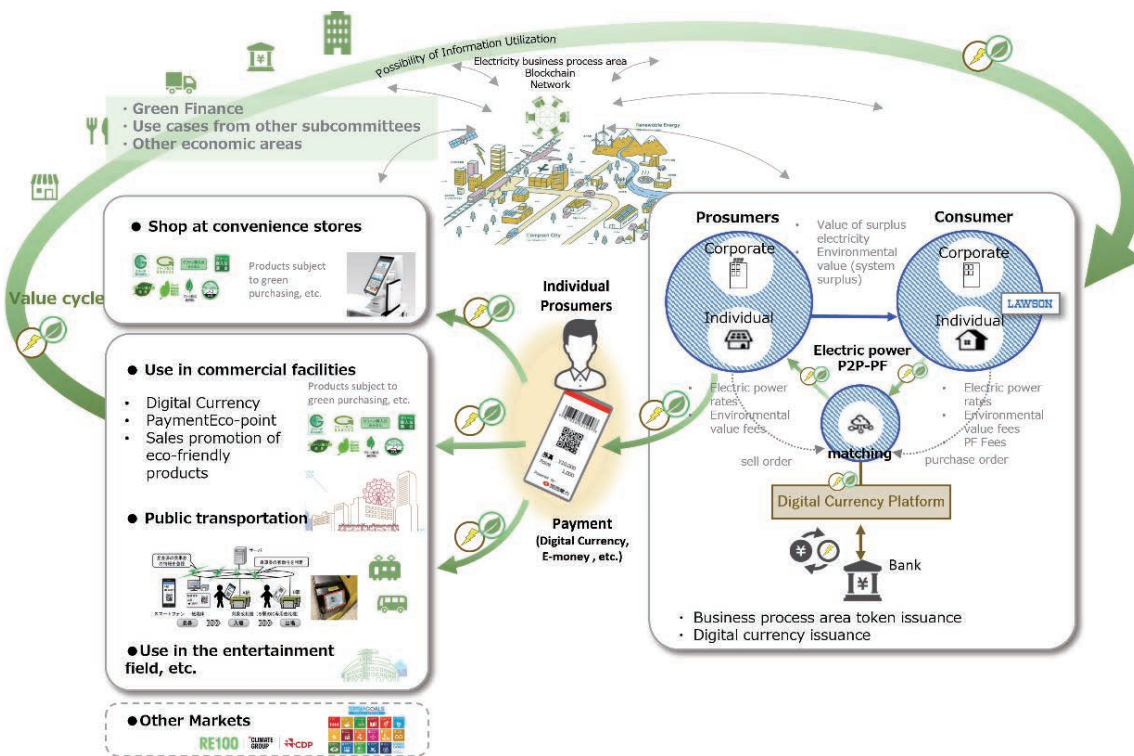


Figure 9: World view of the Electric Power Transaction Subcommittee







## [2] Settlement in Industrial Distribution Subcommittee

### PoC of BtoB trading smart contracts in linkage with digital currency

The Settlement in Industrial Distribution Subcommittee, led by Mitsubishi Corporation, is planning and promoting a PoC to acquire a wide range of knowledge on digital currencies and smart contracts using blockchain. The settlement of various fees in trade transactions faces various issues such as duplication of work between contracting parties, complexity of operations from billing to settlement, and long time lag for financing.

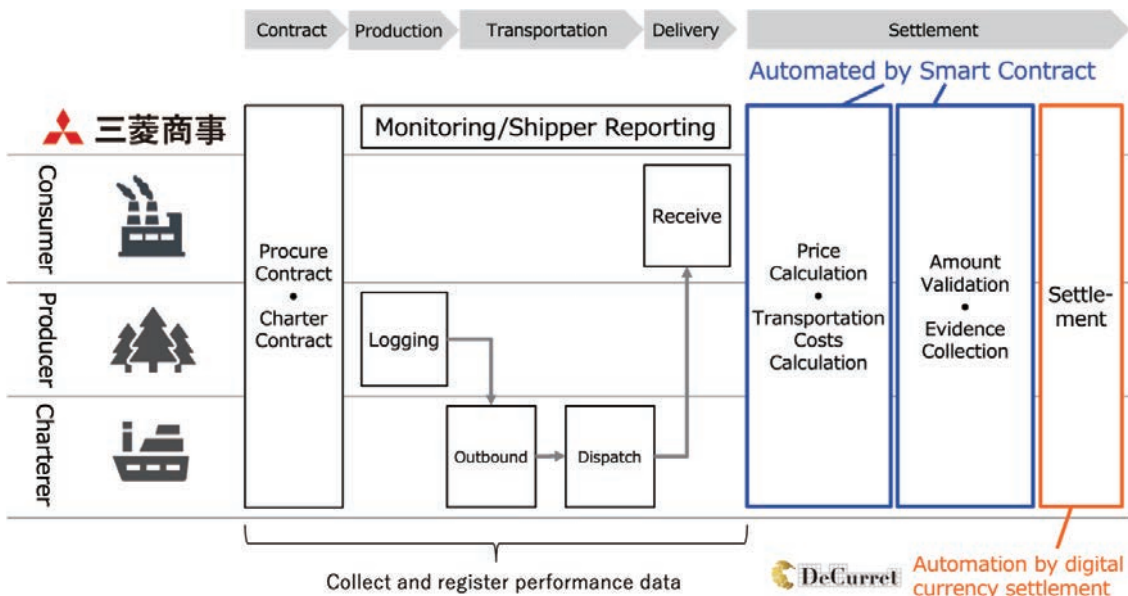
Therefore, this subcommittee conducted technical validation and confirmation of the implementation effects in order to contribute to the problems of complexity and the long time required to deliver funds using digital currencies and smart contracts, through a PoC of automatic execution of contracts using digital currency in the settlement of demurrage charges, etc. related to trade transactions conducted by Mitsubishi Corporation.

#### Overview of PoC

From October 2021 to January 2022, Mitsubishi Corporation conducted a PoC on the automatic calculation and settlement of expenses for the marine transportation of biomass fuel handled by the Petroleum and Chemical Solutions Group.

In this PoC, the subcommittee recorded sample data such as results on the blockchain foundation for a series of tasks from contract conclusion to ship allocation, loading, discharging, billing, and settlement, and conducted experiments on automatic calculation and settlement of expenses using these data. The implementation was carried out with the cooperation of Industry One, Inc.

#### Flow of work under this experiment





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### Participants and roles

**Mitsubishi Corporation, NIPPON TELEGRAPH AND TELEPHONE CORPORATION :**  
Use and validation of digital currency payments

**Industry One, Inc. :**  
Overall planning, smart contract infrastructure construction,  
promotion and evaluation of PoC

**DeCurret DCP Inc. :**  
Provision of system for issuing two-tiered digital currency

### Results of the PoC and next steps

In the scenario of the smart contract validated in this PoC, when the actual value of fuel cost, demurrage time, etc. is agreed between the parties concerned (trading company, shipping company, producer, consumer), the billing amount is automatically calculated at the same time. The settlement is also completed automatically when the calculated charge is approved. If this scenario is realized, not only can all communication history and performance data be checked and managed on one platform, but also it is expected to reduce the back-office work related to payment by up to 80%.

The Settlement in Industrial Distribution Subcommittee aims to provide smart contracts that can be deployed in a wide range of industries in Japan, and will promote service development and provision.



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### [3] Retail and Distribution Subcommittee

#### Conducted a PoC using real transaction data, blockchain technology, and digital currency between retailers and wholesalers

The Retail and Distribution Subcommittee began its activities in December 2020 to discuss the utilization and potential of digital currencies in the retail and distribution sector in Japan, which has sales of some 550 trillion yen (2021), and to form an agreement within the subcommittee on the identification of possible issues that can be solved by digital currencies, the organization of requirements for social implementation, and the direction of solutions based on these.

Since the implementation and spread of EDI<sup>\*1</sup>, which exchanges purchase orders, delivery notes, and invoices, etc. between retailers and wholesalers/manufacturers in Japan electronically, the method of recording and exchanging information within the industry has been standardized.

Based on these trends, the subcommittee considered combining EDI data, which is the industry standard for electronic information exchange in commercial transactions, with a distributed ledger and a digital currency with functions that can transfer instructions on a distributed ledger.

As a result, based on the fact that payment operations that normally involve manual confirmation in a series of business processes can be completed with less or no labor, and that it is technically possible to pay the retail to wholesale price incurred in the transaction (pay for each delivery without a deadline), triggered by the recording and transmission of delivery completion information to EDI in the EDI information linkage process, the subcommittee decided to conduct a PoC with the aim of solving the problems of business operators involved in transactions while utilizing existing EDI services.

With the cooperation of each company participating in the subcommittee and related companies, a PoC was carried out from June 9 (Thu) to 24 (Fri), 2022. The overview of the PoC is as shown in the figure “PoC Overview.” The subcommittee recorded the actual EDI data generated between the retail company and the wholesale company on the blockchain and carried out the payment using digital currency on a daily basis based on information linkage of the product receipts (deliveries). In addition, under the environment of the PoC, it confirmed whether results could be obtained that contribute to the automation of payment processing and the efficiency of accompanying payment operations.

<sup>\*1</sup> **EDI:** Abbreviation of Electronic Data Interchange. Refers to the electronic exchange of business documents such as purchase orders, delivery notes and invoices over a network.



PoC Overview:

Item	Details
Implementation Period	June 9 (Thu) - 24 (Fri), 2022 *Production scenario implementation period
Use Case	Execution of daily settlement by digital currency (settlement for each order slip) in commercial transactions between retail and wholesale businesses
Scope of implementation	Normal business transactions, inter-company settlement (accounting processing) and its linkage
Validation items	<ul style="list-style-type: none"> <li>• Improved work efficiency by digitizing and automating the series of commercial transaction flows in retail and distribution</li> <li>• The usefulness of digital currencies for achieving the above objective</li> <li>• Confirmation of the basic functions of digital currencies in inter-company settlement</li> <li>• Connecting to existing systems and organizing technical issues</li> </ul>

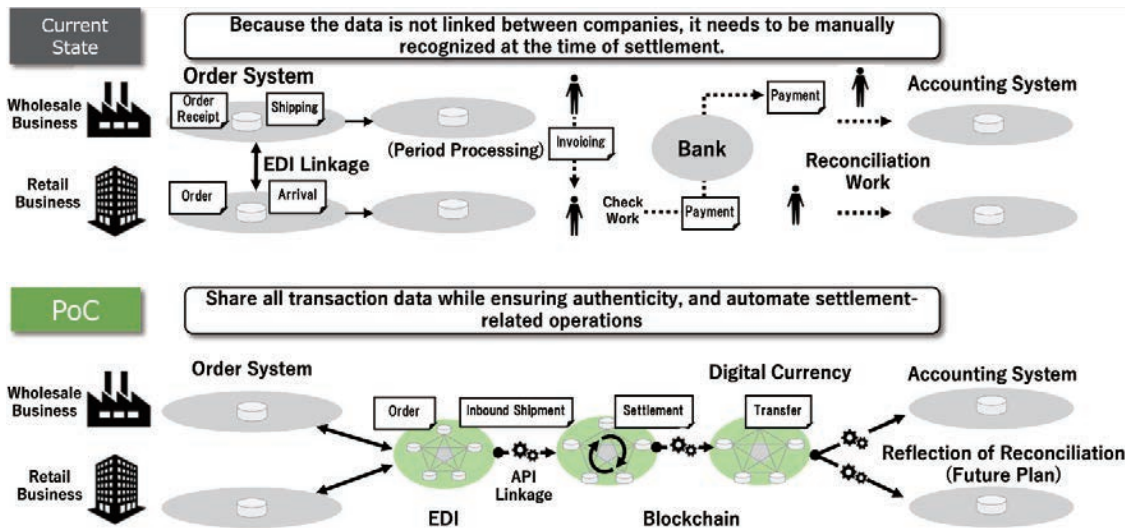


Figure 10: Flow diagram of the PoC (compared to the current flow)

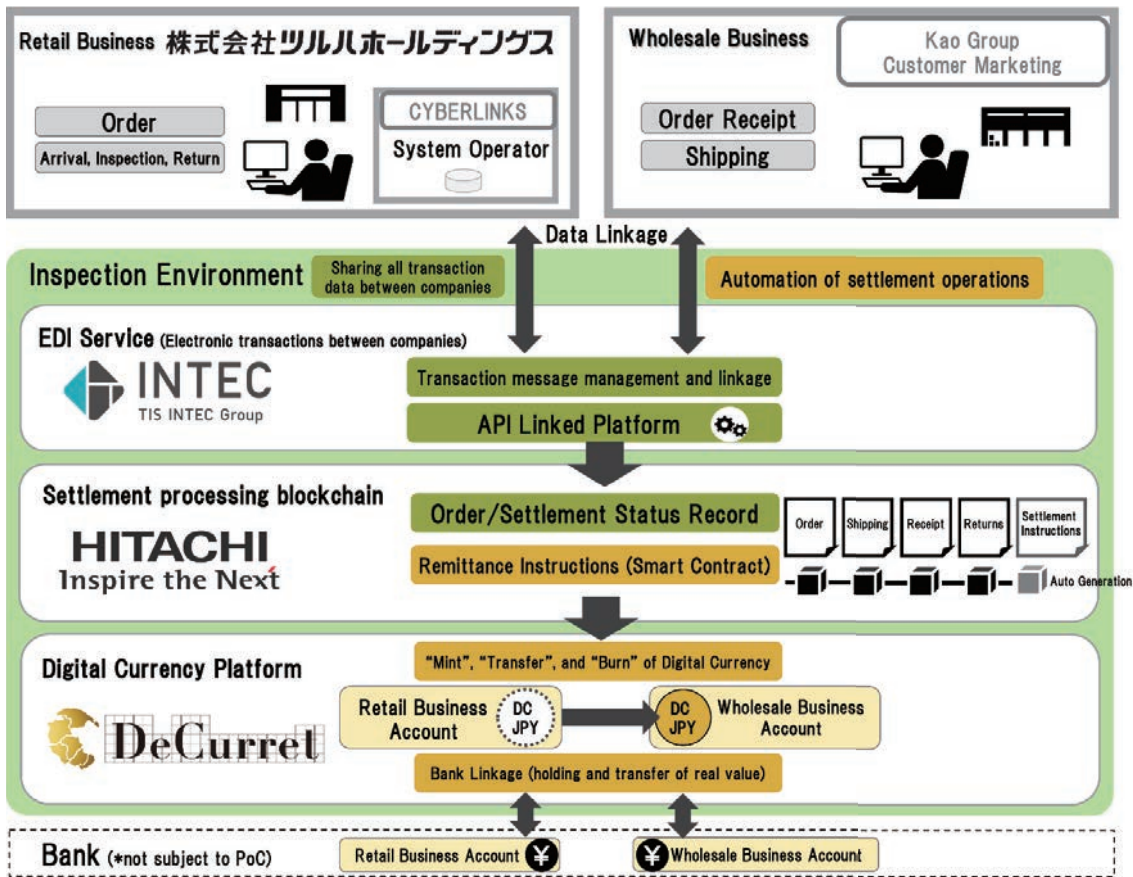


Figure 11: Overview figure of PoC



## Role of each company in the PoC

	Company name	Role
Implementing companies	INTEC Inc.	Provide EDI service for mapping and data conversion of order data, and API linkage platform for API linkage
	TSURUHA HOLDINGS INC.	As a retailer, provide a series of business transaction stages and related data from product ordering to arrival, inspection, and receipt, together with cooperating companies
	Hitachi, Ltd.	Provide blockchain infrastructure (blockchain registration processing of data, smart contract processing, etc.) and create data for payment processing linked to the digital currency DCJPY
	DeCurret DCP Inc.	Establish and provide the PoC environment using the digital currency DCJPY and the two-tiered digital currency platform for payment and settlement
Cooperating companies	Kao Group Customer Marketing Co., Ltd.	Provide sample data for validation
	Cyberlinks Co., Ltd.	Technical support to provide sample data for validation
Sponsor companies	Seven Bank, Ltd. (Organizer)	
	AEON Financial Service Co., Ltd.	
	Mizuho Bank, Ltd.	
	MUFG Bank, Ltd.	
	Mitsubishi UFJ Research and Consulting Co., Ltd.	

As a result of the PoC, the subcommittee was able to confirm the following three points:

- (1) Confirmed the unmanned operation and labor-saving effect in payment operations
- (2) Payments from the retailer to the wholesaler that used to take 30 to 120 days were completed in one business day
- (3) Perspectives (1) and (2) are feasible using existing technologies and digital currencies

These results will lead to the adoption of blockchain technology in the retail and distribution industries in the future and have enabled the subcommittee, which aims to adapt digital currencies, to obtain useful knowledge.



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On the other hand, through this PoC, it was found that there are two major issues for the popularization of digital currencies (automation of administrative processing).

### **1. Supporting transaction patterns that occur in practice**

- (1) Expansion of the scope of application to transactions and items such as fresh food, rebate treatment fresh food, and rebate treatment, etc.
- (2) Expansion of target business partners (e.g. logistics companies and manufacturers)
- (3) Improvement of processing capacity and security, etc. of each system

### **2. Consideration of how to handle the funding aspects of payers and the increase in transfer costs due to the increasing frequency of payments**

- (1) Allowances for funds due to shortening the number of days until payment from retail to wholesaler/manufacturer
- (2) Fees that may be incurred when transferring funds in digital currency or burning funds from a bank account

The issues identified in this PoC are recognized as issues for the future popularization of digital currencies, and we believe that this is an important step for future progress.

Through its future activities, the Retail and Distribution Subcommittee will work to solve these issues and contribute to the streamlining and development of economic activities throughout the supply chain.



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## [4] Wallet Security Subcommittee

### Activities and next steps of the Wallet Security Subcommittee

#### Activities and purpose of the Wallet Security Subcommittee

The Wallet Security Subcommittee is working with the goal of formulating basic security requirements centered on the management of private keys (signing keys), software that uses signing keys, and users so that the companies and organizations participating in the Forum can handle digital currency platforms safely and securely.

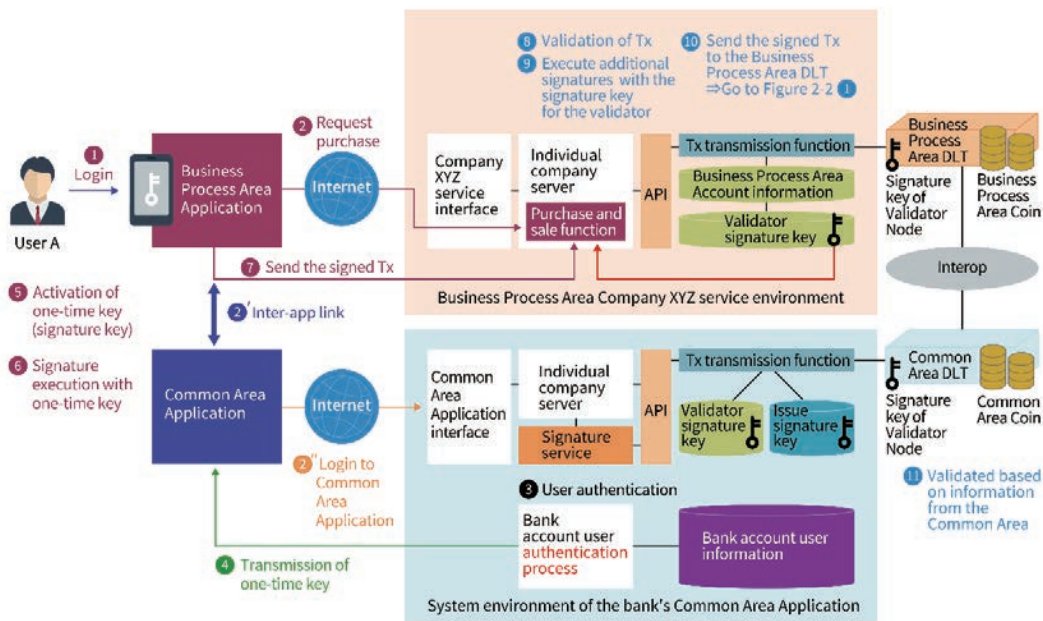
#### Preparation of a security review report centered on key management

Since December 2020, the subcommittee has been discussing points and issues related to security, including the management of signing keys in the Business Process Area, which handles the digital currency platform, and measures to address them. The security discussions focus on the challenges specific to digital currency platforms, with a broader view of security in general.

Therefore, the subcommittee held discussions in a team that investigated various existing standards, industry standards, and guidelines, including user authentication, security systems, and cybersecurity measures, and a team that explored the system for the digital currency platform and considered threats related to signing keys in particular.

These were separated from the first phase of the activity, and the results of this study were compiled into a security review report in August 2022 and shared with the Forum participants. The report organizes the types of signing keys required for each software configuration and application related to the unique distributed ledger in the digital currency platform, analyzes the threats and risks related to the Business Process Area system centered on signing keys, and summarizes the possible countermeasure policies.





This is a snapshot as of the end of June 2022.

Figure 12: Model diagram for contents trading using a digital currency platform

### Future activity policy

After the first edition of the security review report describing the results of the first phase, the activities of the subcommittee have moved to the second phase. The model of the Business Process Area system examined in the first phase assumed a similar configuration to conventional systems in order to clarify the issues.

Considering the form of use of the digital currency platform in the future, including the deliberations in other subcommittees of the Forum, it is also possible to link with another distributed ledger managed independently from the digital currency platform. In this case, it is assumed that the processing is performed mechanically through the smart contract by running the node of another distributed ledger in the Business Process Area system or by running the software linked to an external distributed ledger.

When examining the security of systems that handle distributed ledgers, it is necessary to conduct discussions based on the characteristics of the distributed ledger, such as distributed management by multiple organizations and people and mechanical processing by smart contracts. In addition, the differences in assumptions and characteristics between permissionless and permissioned distributed ledgers also have a large effect.

In the second phase, the subcommittee will organize technical characteristics based on a representative distributed ledger model, and examine security issues and risk mitigation measures related to distributed ledgers.



## [5] NFT Subcommittee

### Validation of the functionality of settlement and digital currency required in the NFT marketplace

The NFT Subcommittee was established to explore the possibilities of digital currency in the entertainment field and is discussing the possibilities of DCJPY for content-based NFT transactions given the excitement in the NFT market.

The current NFT market has calmed down temporarily and is seeking to expand into transactions other than art and games. However, despite the high awareness of NFTs, the holding rate is only a few percent, so we believe that there are major challenges in purchasing and holding NFTs for future market expansion.

So far, we have organized the settlement issues in the existing NFT sales market from the perspective of users, issuers, and distributors, and have considered the functionality required by DCJPY.

Among them, we believe that the realization of Delivery versus Payment (DvP) settlement based on smart contract control is useful for all stakeholders, and we are studying the realization method using the connection with the existing marketplace as an example.

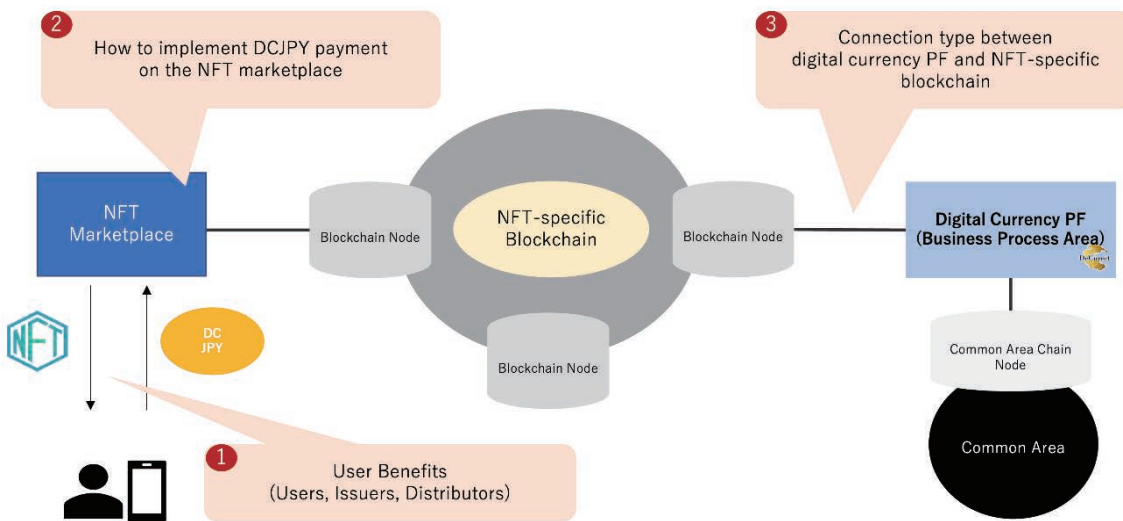


Figure 13: NFT marketplace connection image



## [6] Security Token Settlement Practice and System Study Subcommittee

### - Consideration of DvP payments in digital currency in the security token market -

#### Use of digital currencies in DvP settlement of security tokens

A security token (hereinafter referred to as “ST”) is a digitized security that is issued and managed using a unique technological foundation utilizing advanced technologies such as blockchain. In Japan, the number of ST issuance cases is increasing, and blockchain implementation has already been carried out in accordance with the operational flow that complies with various laws and regulations. However, the payment method is limited to legal tender settlement using the existing framework.

In the future, it is believed that if payment methods in decentralized finance that can shorten the payment period and improve the efficiency of post-trade operations are developed, there will be benefits not only for the financial industry but for all stakeholders.

The Security Token Settlement Practice and System Study Subcommittee was established to examine the feasibility of efficient and secure payments between ST and digital currencies, and we believe that the realization of Delivery versus Payment (DvP) payments between ST and digital currencies will be an important factor in promoting the use of ST and expanding the market. In order to examine various issues to achieve this, from 2021 to 2022, the subcommittee conducted a desktop validation of DvP payments using digital currency and summarized the issues for realization.

#### Validation content

The following points were validated assuming the use of DCJPY advocated by DeCurret DCP Inc.

Major Arguments	Details
① Reorganization of the operating system of the blockchain that handles ST and digital currency	Three operating systems of blockchain infrastructure were defined: A private type based on centralized management; a consortium type that is jointly operated by multiple participants; and a public type that does not have a clear operating entity, and the strengths and challenges of each were validated.
② Challenges in DvP settlement between ST and digital currency	Through a comparison of cases involving settlement of shares, etc. in Yen with DvP, we have summarized the challenges and issues in settlement between ST and digital currencies.
③ Summarization of schemes to realize DvP settlement	Combining the platform provided by DeCurret DCP and the ST platform, we determined multiple schemes and validated each characteristic and challenge.

Source: May 27, 2022 Future Architect, Inc. and Nomura Holdings, Inc. Press Release



## Validation results

With regard to DCJPY DvP settlement using STs, the subcommittee summarized the results of the validation from three perspectives: business use case, technology, and challenges.

Main Items	Details
Business Use Case	<ul style="list-style-type: none"> <li>In each of the scenarios of issuing, distributing, and settling ST, we believe there are many points where technology development is expected to contribute. For example, interest processing, which is the processing of funds, involves many regulations such as business laws, tax laws, and AML/CFT, and the burden between the parties is becoming heavy. If it can be made more efficient using smart contracts, etc., we believe it will be significant in terms of dealing with digital currencies. We examined use cases for creating new value through such technological developments.</li> <li>In addition to the realization of DvP settlement, which is one of the themes of this validation, we confirmed the business needs for issuing ESG bonds as ST bonds using digital currency to take advantage of the traceability of the use of funds. In addition, we examined use cases assuming individual investors and compiled a certain number of use case proposals.</li> </ul>
Technology	<ul style="list-style-type: none"> <li>In this validation, we used the two-tiered digital currency platform as the axis to investigate (1) the case of the "two-tiered" type that uses the second layer of the digital currency platform as the foundation for ST, and (2) the case of the "three-tiered type" that functions as a whole by linking with the existing ST platform that exists independently. There is no structure that we consider to be uniquely optimal, and it is necessary to select the appropriate structure according to the application and operation form.</li> <li>Further additional studies are required on the connection methods that link the blockchain infrastructure of both ST and DCJPY through actual device validation.</li> </ul>
Challenges	<ul style="list-style-type: none"> <li>The three issues described below are the main challenges in digital currency settlement: <ol style="list-style-type: none"> <li><b>1 Organization of business laws and practices for realization</b> When considering the relationship between the application of regulatory laws, the function of the trading platform becomes more important than the technical structure. It is necessary to further organize the management and operation methods in accordance with individual functions and roles, as well as the necessary licenses and permits.</li> <li><b>2 Building payment reliability</b> Under the DCJPY scheme, digital currency is issued with the backing of deposits in private banks, and its safety is considered to be basically the same as that of interbank remittance settlement. In view of the scale of payments, including the shortening of the payment period, it is necessary to establish realization methods and operating rules according to the reliability required.</li> <li><b>3 Summarization of cost advantages</b> Along with the formulation of new business and operation methods by implementing digital currency, it is necessary to deepen the study of payment and operation costs. Examination of the cost structure and convenience that contribute to the interests of all stakeholders is required.</li> </ol> </li> </ul>

Source: May 27, 2022 Future Architect, Inc. and Nomura Holdings, Inc. Press Release

"DvP settlement of ST and DCJPY" has utilization value and is considered to be technically feasible. However, issues such as business methods and cost benefits are expected on the route to realization, and it is necessary to further investigate the nature of DvP settlement to determine whether or not it can be realized.

The Security Token Settlement Practice and System Study Subcommittee believes that when such issues are resolved, the settlement of ST and digital currency may spread in society.



## [7] Regional Coin Subcommittee

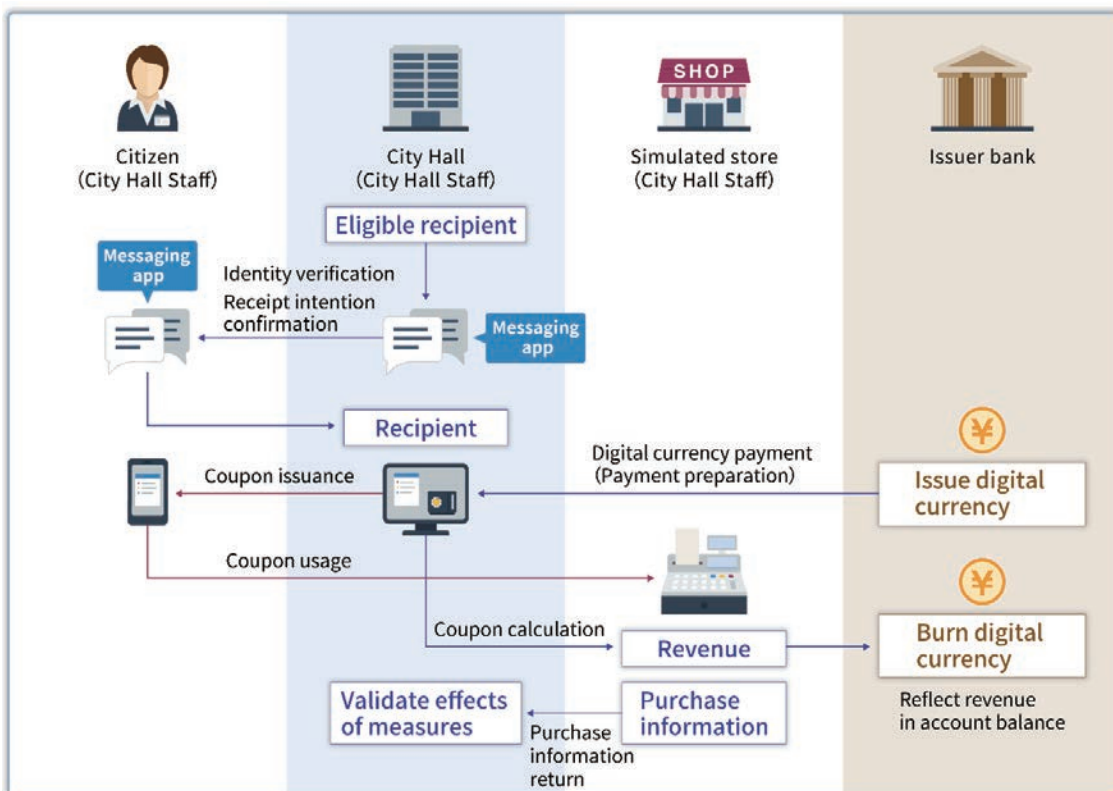
- Aiming to solve regional issues and revitalize regions with digital currency -

### Use of DCJPY as regional coin

As of the end of December 2022, more than 40 companies and local governments have participated in the Regional Coin Subcommittee, which has been actively working for more than two years since its establishment with the aim of solving regional issues and revitalizing regions using DCJPY.

In February 2022, it published the Interim Report - Possibilities of Digital Regional Coins. In terms of the features of the new "Digital Regional Coin" utilizing DCJPY, the subcommittee defined three points: **(1) Data utilization and tracking/traceability can be secured as a digital payment and settlement method;** **(2) The coin is programmable and detailed currency design can be made in line with administrative efficiency and implementation purposes;** and **(3) The coin is issued as private bank debt, and can be used in all payment scenes without restrictions.**

In order to validate these features specifically, through confirmation of the behavior of DCJPY's core two-tiered platform function and the function of the regional wallet as a user interface, the subcommittee conducted a small-scale PoC in March 2022 in Aizuwakamatsu City and Kesenuma City, which were participating municipalities, together with the Administrative Affairs Subcommittee (See figure below. For details on the PoC scenarios, see the Administrative Affairs Subcommittee page.)





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Through this experiment, the three features of the “digital regional currency” using DCJPY were validated, and issues for future practical application such as wallet usability and security measures were also identified. The effectiveness of DCJPY in resolving regional issues and revitalizing regions including the control of coupon use, the use of sales data, and instant merchant settlement, was also clarified.

In FY2022, Aizuwakamatsu City applied for a grant under the Digital Garden City Nation Initiative in order to develop and deepen “Smart City Aizuwakamatsu.” In the payments field, the introduction of a digital regional coin foundation aims to reduce the burden on stores of settlement fees and cashless advance payment settlements, which are hindering the shift to cashless transactions in regions.

Starting in the second half of FY2022, the city will start introducing digital coins in the retail, services, food, and agriculture sectors, making transactions more convenient for citizens and stores and promoting the use of data for applications such as using purchasing behavior data for health advisory services via a data linkage platform based on opting-in. The Regional Coin Subcommittee is also working with local financial institutions to conduct a PoC using DCJPY for some of the above-mentioned retail, services, and food and agriculture settlements.

In FY2022, the activities of the subcommittee are entering a new stage with the participation of regional financial institutions that have already developed regional coin services, leading local companies, and local governments aiming to build new regional payment platforms to enhance regional DX. The subcommittee will continue to work with participating companies and local governments to accelerate its studies and realize digital regional coins that are sustainable in regions and contribute to the resolution of regional issues through the use of DCJPY.



## [8] Administrative Affairs Subcommittee

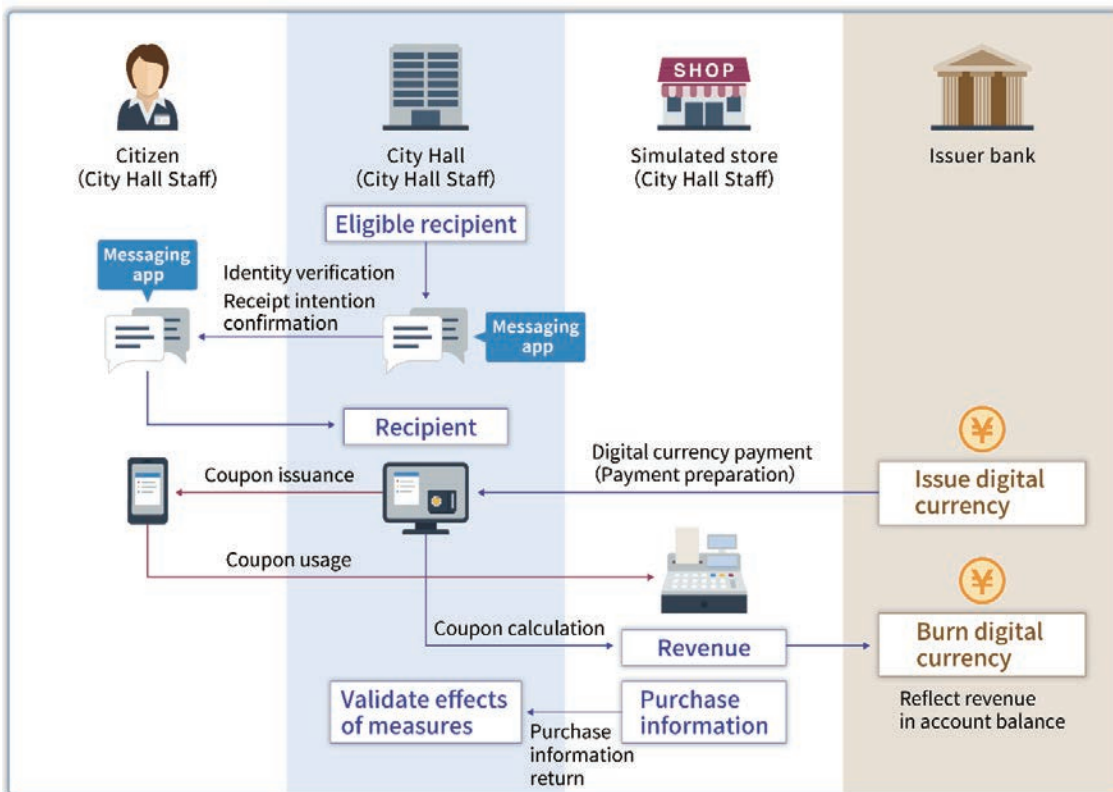
### - Promotion of administrative affairs DX based on digital currency -

#### Use of DCJPY in administrative affairs

The Administrative Affairs Subcommittee is examining how DCJPY can be used to solve issues and improve the efficiency of administrative procedures involving the transfer of funds, such as tax payments and the delivery of various benefits and subsidies.

As a result of examining use cases together with participating companies that take advantage of the unique characteristics of DCJPY, such as programmability and traceability, as well as improving administrative efficiency through digitalization, in March 2022, the subcommittee conducted a PoC related to the “delivery of coupons using DCJPY” assuming temporary special benefits for child-rearing households in Aizuwakamatsu City and Kesenuma City together with the Regional Coin Subcommittee (See figure below). The following shows a summary of the PoC scenarios.

- (1) Using a message distribution service for mobile phones, perform identity verification and coupon acceptance confirmation procedures from city hall to the resident’s smartphone.
- (2) Download a wallet on residents’ smartphones, and give coupons to residents who want to receive them from city hall.
- (3) Residents use the coupons in stores to purchase childcare products. Also prepare stores that sell alcohol and confirm that coupons cannot be used there. Purchase information is anonymized and returned to city hall to validate the effectiveness of the measures.
- (4) Utilize a two-tiered platform to issue DCJPY backed by the bank’s ordinary deposit account and settle sales to the store according to the usage status of the coupon.
- (5) After the experiment, city hall and the store each burn the DCJPY they own and deposit them into their ordinary deposit accounts.



The above workflow was tested on about ten city hall employees who assumed the roles of city hall, store, and residents. As a result of the validation, it has become possible to issue coupons efficiently in a short period of time by digitizing benefits operations that were traditionally conducted by mail, such as confirming intention to receive and sending coupons.

The coupons were restricted in use, and information such as when and what was used was returned, so it was easy to confirm the achievements and effects of the measures. By performing settlements with DCJPY, stores can monetize sales in real time, and both the speed from implementation to penetration and the digitalization of benefits has been dramatically improved, and the scheme has been shown to contribute to government efficiency.

Following this PoC, in FY2022, the subcommittee will continue to study PoC scenarios and schemes to make them more concrete, focusing on three use cases: **(1) Tracking grants and subsidies for corporations and external payments by eligible businesses** **(2) Using DCJPY to pay taxes and various fees to local governments** **(3) Linking medical care and nursing care over a wide area and automating payments.**

It is believed that DCJPY can contribute in many ways to the DX of the administrative affairs in Japan, where the need for it has become apparent due to the COVID-19 pandemic. We will continue to come up with ideas together with the participating companies.





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## Column

# “Centralization” and “Decentralization” in Finance

Finance consists of sophisticated information processing, and up to now this information processing has been realized by combinations of “centralized” and “dispersed” methods and structures reflecting the available technologies of the time.

For example, in a cash transaction, each recipient checks whether the cash handed over is the agreed amount, and whether it is not a counterfeit banknote or counterfeit coin. When paper and metal technologies were dominant, it was difficult to process the huge amount of payment and settlement data related to people's daily transactions through a centralized system. The cash mechanism generated in this way has successfully utilized each recipient's incentive to securely obtain the agreed amount, and has realized efficient information processing while incorporating a decentralized structure.

On the other hand, if the value of cash is unstable, the transaction party will be at risk stemming from the volatility of the value of cash, which is typically inflation. Therefore, since the 19th century, countries have centralized sovereign currency issuance rights in their central banks under the mechanism of the modern nation-state. Those countries have also introduced banking regulations and deposit insurance for commercial banks and bank deposits in order to stabilize the value of bank deposits, which should be used widely as instruments for payments and settlements. In other words, the modern monetary system has utilized a centralized framework based on the modern nation states in order to stabilize the value of payment and settlement instruments, while utilizing also a decentralized mechanism for information processing related to payments and settlements. As such, the combination of centralized and decentralized structures has been utilized to achieve both stability and efficiency of modern monetary system.

With technological innovation, computers became able to process a lot of information, and with this came the development of electronic financial transactions under a centralized structure. For example, securities that were traditionally handed over as pieces of paper have been de-materialized and digitized, and the transactions of them are now processed as electronic data under a centralized structure of book entry systems. Regarding such structural changes in securities trading, initially, the system used the legal concept of assuming the existence of “paper” in the book entry system, such as “global notes,” “commingled storage,” and “transfer of possession by instruction,” owing to the constraints of the legal systems at that stage. However, since then, legal frameworks have been updated so as to facilitate digitized transactions under a centralized framework, as shown in the establishment of the “Act on Book Entry of Corporate Bonds and Shares” (2001).



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The emergence of blockchain and distributed ledger technology in 2009 has opened up the new possibilities of combinations between “digital technology” and “decentralization” for financial and economic transactions.

Initially, in terms of the application of blockchain and distributed ledgers, “crypto-assets” (at the time called “virtual currencies”) tried to stabilize the value of those assets through “computational competition” and other means under a decentralized structure, instead of the centralized framework of the state and central banks. Although such attempts attracted public attention, however, the value of crypto-assets have continued to fluctuate significantly. This suggests that mankind has still not found a more efficient mechanism than the nation-state to stabilize the value of the means of payments at this stage. “Stable coins” that appeared later, backed by government bonds, bank deposits, and other assets, can be regarded as partially utilizing the framework of the nation state in order to stabilize their value.

The potential of blockchain and distributed ledger technology is broader and not limited to crypto-assets. They can create new added value in wide-ranging financial transactions and economic activities through combinations of “digital” and “distributed” technologies and structures. For example, we can radically improve the efficiency and added-value of transactions through the application of smart contracts, create new digital assets, and realize “decentralized finance” (DeFi) and “decentralized markets” (DEX).

Relying on a centralized framework to implement these new economic activities can also create problems, such as limiting transaction time to a specific computer’s uptime, or the specific computer becoming an “SPF” (Single Point of Failure) in the infrastructure, meaning that the failure of the computer may risk the operation of the whole infrastructure. With the widespread use of PCs, however, the use of new decentralized digital technologies has made it possible to operate 24 hours a day, 365 days a year, without relying on a centralized computing center, while preventing counterfeiting and duplicated transfers.

In order to facilitate such new financial and economic transactions, financial infrastructure with payment and settlement instruments whose value is stable and which can utilize decentralized digital technology is strongly needed. Moreover, in order to maximize the potential of such new technologies, it is important to create institutional frameworks that can fully utilize the new benefits created by the combination of “digital and distributed.” In this regard, the Digital Currency Forum will continue making contributions by way of constructive suggestions to relevant entities.

References: Noriyuki Yanagawa, Hiromi Yamaoka, Law and Economics of Blockchain and Distributed Ledger Technology (Bank of Japan Working Paper, 2017)  
[https://www.boj.or.jp/research/wps\\_rev/wps\\_2017/data/wp17j01.pdf](https://www.boj.or.jp/research/wps_rev/wps_2017/data/wp17j01.pdf)  
(Available only in Japanese)



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## Conclusion

The Digital Currency Forum holds a monthly plenary meeting remotely, where the activities of each subcommittee are shared and questions are answered. When I attend this meeting, I often feel that this is where the revival of the Japanese economy may begin. Let me explain a little bit further.

The Japanese economy has long been mocked as being a “lost 20 years” or “30 years.” In order to revitalize the economy, the government has been implementing economic measures with a large supplementary budget every year, but unfortunately, nobody in Japan feels that the economy has embarked on a new growth trajectory. Everyone is aware of the major structural changes in the socio-economic environment, including the decline in the population, but it is impossible for a government to respond to them robustly, whose main goal is to create annual budgets that do not upset conflicting interests. Structural challenges require long-term “strategies” with a view to the future rather than short-term “tactics.”

I believe that it is only private sector entities that formulate long-term strategies, and when the government identifies certain trends in the private sector, it should support them. In addition, I believe that the formulation of long-term strategies requires the unity of private companies. The dynamism of capitalism lies in competition, but it is not possible to create a new economy and society from the endless competition in production of goods and services that are imitated immediately and become red oceans. Companies with the same problem consciousness and dreams for the future should work together to create a large framework of products and services that will fundamentally change people’s lives. Within that framework, each company should work hard to bring out better individual products and services to the world. That is the desirable type of approach.

The era of the digital society in which Web 3.0 is trumpeted is approaching. Looking back on history, the semiconductor, IC and Internet technologies that have evolved over the past half-century after their birth have created giant companies such as GAFAM in the United States, the place of their development, surpassing the large Japanese companies that enjoyed prosperity in the late 1980s. Since the collapse of the bubble in the 1990s, Japan’s macro economy has been plagued by deflation and low growth, and individual companies have suffered from low productivity, low profits, intensified global competition, and regional economic exhaustion. However, although various problems still remain, Japanese companies are increasing their willingness to take on the challenge of building new business models using digital technology that is equal around the world.



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The seriousness of Japanese companies can be well understood by looking at the activities of the Digital Currency Forum. Since the last Progress Report in November 2021, the number of participating companies has reached 100, and many PoC and desktop validations involving more than 40 companies have been successfully carried out. I invite you to read about the PoCs and desktop validations in “Part 3 Concrete steps toward the realization of digital currency,” but these initiatives do not only remind us of the challenges that must be overcome in order to build a digital society ecosystem, but also demonstrate many results that can make us hopeful about the realization of a new economy and society through digitalization.

As we continue to move forward, we come up with new ideas. In 2023, Forum participants will continue to confirm the feasibility of such ideas through the implementation of PoCs. At the same time, we hope to gradually realize implementation of the fields that have been studied in society, and concretely demonstrate the value of the digital society to the world. We will execute the “strategies” described by the forum subcommittees in the real world using “tactics.” I believe 2023 will be a year of major challenges for us.

**Toshihide Endo**  
Senior Advisor  
Digital Currency Forum





# Appendix

## The Digital Currency Forum Members

### Companies and entities participating from the Digital Currency Study Group

#### Chairperson

Hiroki Yamaoka, Director, Future Corporation  
(Former Head of the Payment and Settlement Systems Department, Bank of Japan)

#### Observers

- Financial Services Agency, Japan
- Ministry of Internal Affairs and Communications, Japan
- Ministry of Finance, Japan
- Ministry of Economy, Trade and Industry, Japan
- Bank of Japan

### Participating from the Digital Currency Forum

- Aioi Nissay Dowa Insurance Co., Ltd.
- Aizuwakamatsu City
- Accenture Japan Ltd.
- Asukoe Partners, Inc.
- AEON Co., Ltd.
- AEON Financial Service Co., Ltd.
- Internet Initiative Japan Inc.
- Industry One, Inc.
- INTEC Inc.
- Intelligent Wave Inc.
- ANA Group (ACD Inc.)
- SBI Holdings, Inc.
- ENERES Co., Ltd.
- NTT Group
- Future Innovation Group, Inc.
- au Kabucom Securities Co., Ltd.
- au Jibun Bank Corporation
- au Financial Holdings Corporation
- Osaka Digital Exchange Co., Ltd.
- Kao Group Customer Marketing Co., Ltd.
- KATAOKA & KOBAYASHI LPC.
- The Kansai Electric Power Company, Incorporated
- Keychain GK
- Payments Japan Association, Incorporated
- Kyushu Financial Group, Inc.
- KYOCERA Corporation
- Kumamoto Prefectural Government
- xID Inc.
- KDDI CORPORATION
- Kesenuma city
- CYBERLINKS CO., LTD.
- SATUDORA HOLDINGS CO., LTD.
- JCB Co., Ltd.
- JPX Market Innovation & Research, Inc.
- SIGMAXYZ Inc.
- Super City AiCT Consortium
- SUMITOMO CORPORATION
- SUMITOMO LIFE INSURANCE COMPANY
- Securitize Japan K.K.
- SECOM CO., LTD.
- Seven Bank, Ltd. (Seven & i Holdings Co., Ltd.)
- SOHGO SECURITY SERVICES CO., LTD.(ALSOK)
- SocioFuture, Ltd.
- Sony Bank Incorporated
- Sony Payment Services Inc.
- SoftBank Corp.
- Sompo Holdings, Inc.
- DAIICHIKOSHO CO., LTD.
- DAIDO LIFE INSURANCE COMPANY
- Dai Nippon Printing Co., Ltd.
- Daiwa Securities Group Inc.
- Daiwa Institute of Research Ltd.
- Chubu Electric Power Co., Inc.
- TSURUHA HOLDINGS INC.
- TIS Inc.
- DENTSU INC.
- Tokio Marine & Nichido Fire Insurance Co., Ltd.
- Tokyo Kiraboshi Financial Group, Inc.
- Tokyo Financial Exchange Inc.
- TOKYO METROPOLITAN GOVERNMENT
- Toppan Inc.
- TOPPAN FORMS CO., LTD.
- THE NISHI-NIPPON CITY BANK, LTD.
- West Japan Railway Company
- NS Solutions Corporation
- The Mortgage Corporation of Japan, Limited
- Japan Securities Clearing Corporation
- NEC Corporation
- Nomura Research Institute, Ltd.
- Nomura Holdings, Inc.
- HashPort Inc.
- Hamamatsu City
- Hankyu Hanshin Holdings, Inc.
- PwC Consulting LLC
- East Japan Railway Company
- Hitachi, Ltd.
- BIPROGY Inc.
- The Hiroshima Bank, Ltd.
- FamilyMart Co., Ltd.
- Fintertech Co. Ltd.
- BOOSTRY Co., Ltd.
- Future Architect, Inc.
- Payroll Inc.
- Mizuho Bank, Ltd.
- Mitsui Sumitomo Insurance Co., Ltd.
- Sumitomo Mitsui Banking Corporation
- Sumitomo Mitsui Trust Bank, Limited
- Mitsubishi Corporation
- MUFG Bank, Ltd.
- Mitsubishi UFJ NICOS Co., Ltd.
- Mitsubishi UFJ Research and Consulting Co., Ltd
- MIRAI Inc.
- Meiji Yasuda Life Insurance Company
- Mori Hamada & Matsumoto
- YAMATO HOLDINGS CO., LTD.
- JAPAN POST BANK Co., Ltd.
- Rakuten Edy, Inc.
- Resona Holdings, Inc.
- Lawson, Inc.
- Laurel Bank Machines Co., Ltd.

(100 companies, municipalities, and organizations)

#### Advisors

- Masakazu Masujima Partner, Mori Hamada & Matsumoto
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- Shunji Kobayakawa Professor, School of Political Science and Economics Meiji University
- Kenji Saito Professor, Graduate School of Business and Finance Waseda University
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#### Senior Advisor

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