Grand Design of Electronic CP Settlement System

25th October, 2001

© Corporate Finance and Treasury Association of Japan
The Japan Commercial Paper Association
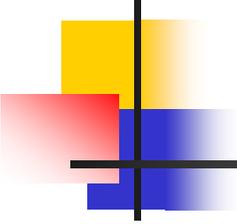
Table of Contents

Foreword

1. Scope of the Report

1 - 1. Products and Business Areas to be Covered
1 - 2. CP Settlement System and Linkage to Review
1 - 3. Development Process of Grand Design

2. Assumptions

2 - 1. Conditions for New Settlement System
2 - 2. Assumptions for Grand Design Development

3. Grand Design - Aimed Directions

3 - 1. Issuance
3 - 2. Secondary Trades
3 - 3. Redemption / Coupon Payment

4. Short term Solution

4 - 1. Purpose of the Short Term Solution
4 - 2. Operational Flow of the Short Term Solution

5. Master Plan for Implementation

5 - 1. Schedule for Realization
5 - 2. Estimated Costs of Electronic CP, etc.
5 - 3. Questions Requiring Continuous Study

Afterword
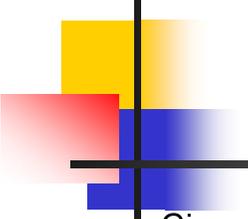
Foreword

Given that the "Law of Book Entry Transfer of Short Term Bonds, etc." ("Electronic CP Law") was established last June and will be enforced next April, Corporate Finance and Treasury Association of Japan (CFTA) decided to summarize proposals for the improvement of the settlement infrastructure of CP in its sub-committee called "Japan CP Association" (JCPA).

CFTA and JCPA have been working for the realization of electronic CP and bond markets with the help of the authorities and some market participants. This report suggests a **Grand Design** setting out what the settlement system should be for smooth funding by corporations and a **Short Term Solution** to quickly realize electronic CP issuance and secondary trade book entry transfer settlement under the new legal regime. We expect that all the related institutions would promote internal studies in line with the two strategies. We believe that these are inevitable infrastructure improvement items for Japanese capital markets development and will contribute to more efficient and smoother funding by private businesses as a result.

1. Short Term Solution: A new issuance/settlement system for electronic CP should be established within a year.

2. Long Term Solution: Settlement systems for electronic CP and bonds following the Grand Design should be established within 2 or 3 years.

We received cooperation and suggestions from many parties and believe that we have investigated the subjects in a practical manner while aiming at the ideal solution. This report was summarized by TradeWin and the member companies of the conference.   There may still be some issues requiring further investigation but this report should be a basis springboard to start the development of an electronic CP settlement system and further discussions and analyses in more detail by the related parties.

Lastly, we would like to thank all the experts in market operations and technologies who attended our meetings, held on more than ten occasions, and provided important opinions.

CFTA / JCPA
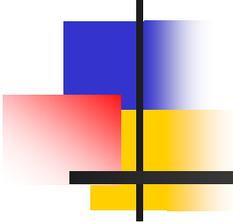
1. Scope of the Report

1 - 1. Products and Business Areas to be Covered

1 - 2. CP Settlement System and Linkage to Review

1 - 3. Development Process of Grand Design
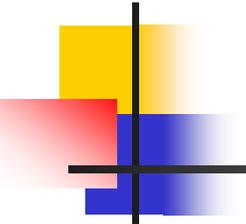
1 - 1. Products and Business Areas to be Covered

This report mainly discusses an electronic CP settlement system but also includes electronic bond issuance, which will be possible under a new law, "Electronic Bond Law (provisional name)" expected to be established next year

Products: electronic CP and electronic bonds

(electronic bond: assuming that life to maturity is equal to, or longer than, one year and coupon interest is paid in addition to the redemption amount)

Business Areas:

Issuance

Confirm * /settlement operations after issuance conditions are decided.

Secondary Trading

Confirm * /settlement operations after trade execution. In relation to a Gensaki trade, which is a common trade type now, the central clearing/depository institution does not manage the maturity of each trade (start and end date control). Namely the parties concerned are to manage these: at the clearing institution mutual confirms and settlements of start and end trades take place.

Redemption/Coupon Payment

Confirm * /payments of redemption money and coupon interest. As the legal scheme for coupon interest is still uncertain, need to reconcile the new scheme after legislation.

("Confirm" in this report does not mean confirm of execution but confirm of settlement)

1 - 2. CP Settlement System and Linkage to Review

The study focuses on settlement scheme to suggest the Grand Design for the establishment of a book entry transfer system. Thus, it does not include operational issues prior to trade execution.

Overview of Electronic CP Settlement System

Direct Paper

Dealer Paper

(This assumes that both issuer and investor are participants of the central clearing/depository institution in the above charts. In the case of indirect members, their custody agent, who is a participant, has the linkage to the central depository. There may be such case when a clearing bank becomes the custody agent)
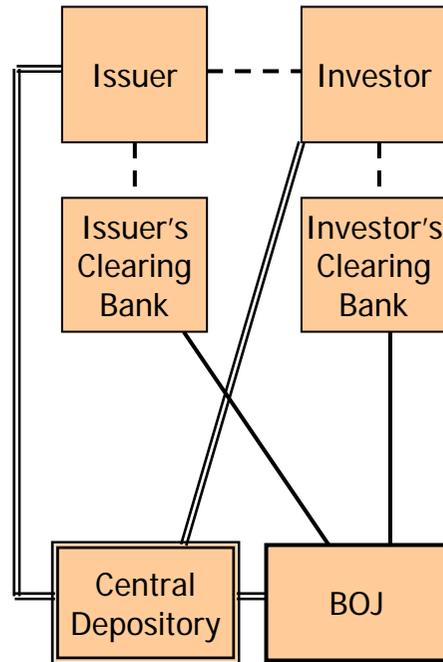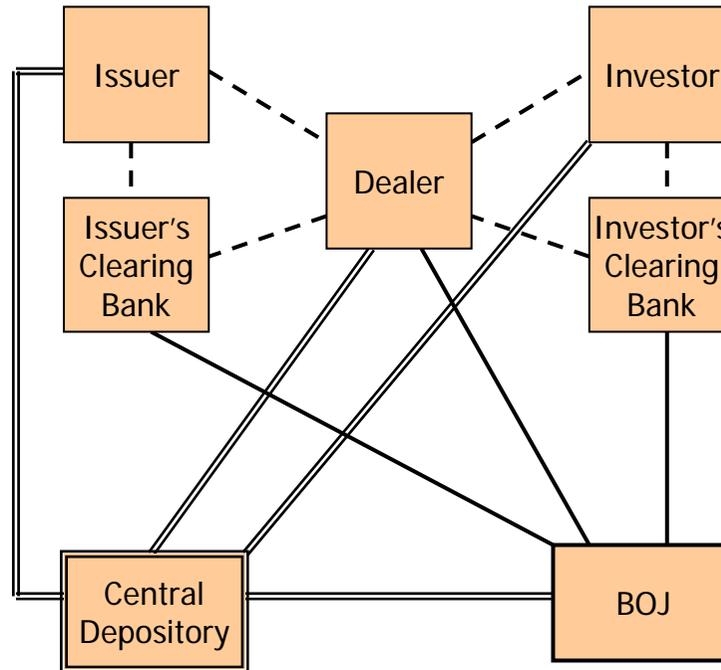
Issues to consider in the Grand Design

—— Linkage to be reviewed in this report (assume two links are available between the central depository and its participants): for confirm and settlement

——— Currently existing linkage. But it may be necessary to review when considering practical operational scheme in the electronic CP settlement system

------- Linkage necessary for trade detail confirmation: not directly related to book entry transfer

1 - 3. Development Process of Grand Design

This report first summarizes the necessary conditions for the electronic CP settlement system from the issuer's viewpoint, and then proposes the Grand Design (practical operational scheme)

How to achieve the Grand Design (planning of settlement system) should be discussed by the candidate settlement institution and its users

Study by the Candidate Settlement Institution

Areas to Discuss for Planning Grand Design

Collecting Info & Finding Problems
Review current settlement systems
Grasp items discussed in various study groups
Understand problems/issues relating to the Grand Design

Plan Grand Design
Itemize users requirements and assumptions/conditions
Consider scheme of Grand Design (ideal direction)
Consider the scheme of short term solution

Decide Future Strategies
Investigate strategies to solve problems
Plan schedule for realization
Study usage costs of settlement system

Architect Outline of Settlement System
Define conditions of operation system
Define conditions of technical infrastructure
Define conditions to switch-over from current systems

Decide Implementation Plan
Total Schedule
Development resources/ organization & budget
Agreement of Implementation Plan

Development Organization

2. Assumptions

2 - 1. Conditions for New Settlement System

2 - 2. Assumptions for Grand Design Development

    2 - 2 - 1. Assumptions for Operational Procedures

    2 - 2 - 2. Assumptions for Materialization
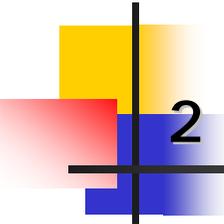
2 – 1. Conditions for New Settlement System

In order to realize a paperless electronic CP book entry transfer settlement system, the following are the conditions necessary for market expansion from the viewpoint of market participants including issuers:

Reduction of Operational Burdens for Issuance, Secondary Trading and Redemption/Coupon Payment

Realize efficient operational procedures for issuance, trade settlement, redemption/coupon payment for issuers and financial institutions upon the introduction of uncertificated securities and book-entry transfer.

Reduction of Settlement Risks

Introduce DVP settlement or similar system, to reduce settlement risks relating to issuance, secondary trades, or redemption. Also need to introduce some system to secure intra-day liquidity capable of absorbing increased trade volume.

Efficient Funding (same day value)

In order to include electronic CP trades in cash control / liquidity control, same day settlement trades and same day value funds are inevitable. To realize those, fund settlement should be done through BOJ current accounts settlement system under RTGS.

Early construction of lower cost and safer infrastructure

Need to keep users' fees at a competitive level in the global markets. For that purpose, it is necessary to create a simpler system as soon as possible with functionality to respond to the market development. Appropriate security system should be set up while maintaining cost reduction.

Settlement System Forecasting Future Expansion of Eligible Product Types

Although there are some limitations, such as product type and levels of accounts at the central depository under the current Electronic CP Law, the system should envisage the possible revision of the law.
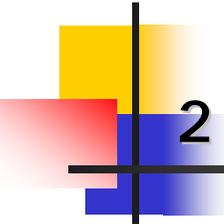
1. Roles of the Clearing Bank

Clearing Bank

The clearing bank settles funds and securities on behalf of the central depository's participants at the issuance, secondary trades, and redemption of securities (can be an agent for both funds and securities or only for money settlement)

As a part of acting as funds settlement agent, a clearing bank supplies cash liquidity (settlement credit line) * and manages participants' money account balances

 * assumes that an agreement setting up overdraft facility and collateral supply for repo trades is in place between the clearing bank and participant

Issuance and Redemption/Coupon Payment

In addition to the above, the clearing bank pays redemption money and coupon on behalf of the issuer. Also, if the issuer itself does not perform the issuance operation, the clearing bank may take over

Issuance: 1) issuance report to the central depository (request for a new security code and provisional application for new registration), 2) confirm receipt of funds from dealers (in the case of direct paper, from the investor or his agent) and pay to the issuer

Paying Agent: 1) pre-notice of redemption/coupon payments to the issuer (if necessary, supply funds), 2) request the central depository to pay and redeem the security *, 3) confirm the payments

 * Article 49 - 2 and 5 of the Electronic CP Law states that the issuer requests the CP holder or pledgee to make an application for cancellation of the note due to redemption to the central depository, and the cancellation application is made by the central depository participant who has a position to be redeemed. By adding an article in the central depository's operational rules that all participants entrust the central depository with the right to make the cancellation request in exchange for redemption money payment based on the issuer's request, the central depository can cancel the redeemed CP on direct request from issuer.
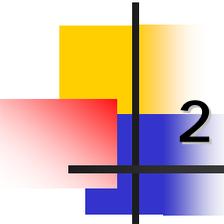
2. DVP Settlement Scheme

Basic Model

Assume Gross=Gross DVP for electronic CP settlement, as it is common overseas and reasonable from the marketability viewpoint (so-called BIS DVP Model 1). * Once a trade is settled, it should not be able to be amended - final.

* In the case of a rollover, there may be a case that both parties agreed to settle on a net basis. But this should be an exception and excluded from this analysis

Settlement Confirmation

A function where the deliverer and receiver can confirm trade details before DVP settlement should be provided *. In order to realize this function, each participant should register its own standing settlement instruction (SSI, agent bank name, account code, etc.) with the central depository's SSI Database

* If multiple levels of accounts are permitted by the revision of the law and no actual book entry transfer between participants is made (position is transferred in the same participant; deliverer and receiver use the same agent), the use of this function is optional

Payment Instruction

In the BOJ Current A/C Settlement System, a payer needs to input an instruction to transfer funds in principle. In order to deal with increasing CP trade volumes, we assume that the central depository will release fund settlement instructions after the participants mutually confirm settlement. We may need to consider creating a queue of instructions in the system to make settlements more efficient as well as the central bank's intra-day liquidity supply with in-transit collateral to ease financial institutions' funding difficulties intra-day.
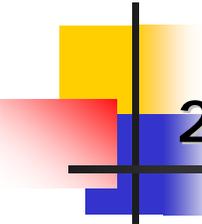
3. Ensuring Liquidity

Credit Granted by the Clearing Bank

The clearing bank as settlement agent of participants supplies settlement liquidity (settlement credit limit) *. The CP buyer's cash payment is done on a real time basis up to the credit line **.

* Participants are required to deposit collateral (such as cash and/or securities) with the clearing bank. Establishment of a standard agreement concerning settlement agent operations is required to allow participants to flexibly deposit/withdraw collateral.

** It is assumed that the clearing bank will manage credit lines by participant

Intra-day Liquidity Supply by BOJ

In order to perform DVP settlement efficiently, intra-day liquidity supply with in-transit collateral * is necessary.

* Regarding in-transit collateral, the operational rules need to be amended to provide such arrangements as funding by collateral deposited by third party, ownership transfer as collateral (joto-tanpo), etc. In the case of providing custody services, an agreement with similar contents will need to be prepared.

Queuing Function

Queuing Function for outstanding settlement instructions * is created in both the central depository and BOJ systems in order to settle trades smoothly and efficiently when volume increases. By this, even if a trade was not settled due to an insufficient balance, the system will retry to settle those trades, resulting in the avoidance of fails attributable to a temporary liquidity shortage **.

* Need to consider cash settlement Queuing Function in BOJ Net not only for CP but also JGBs

** If a liquidity shortage happens due to grid lock (loop) and there are many accounts involved, it is not easy to automatically solve the problem. It is necessary to have an function to manually cancel instructions.
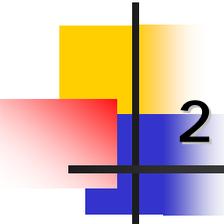
4. T+0 Settlement and Same Day Value Fund

Immediate Assignment of Security Code

The central depository, upon receipt of a new issue notice by the issuer or its agent, automatically assigns a security code number to the new CP and inform the participants

   * The notice includes not only the details of the new CP and the request for a new code but also the issuer's consent that the new CP is deposited/settled in the central depository (Electronic CP Law's requirement).
   ** Assume to take such coding method of electronic CP as any digit has no meaning, which are common in American / European countries. However, need to ensure new coding will not conflict with existing coding systems.

Central Depository's Operation Time Schedule

To make same day value funds available, need to have the same operation time schedule as BOJ RTGS *. Considering the end trades of Gensaki / Repo, instructions should be accepted even before S/D **. Such pre-S/D instructions are processed soon after the opening of the central depository's operation on the S/D.

   * Not assuming that participants have cash accounts with the central depository to be able to settle trades even after the close of the central bank's operation hours, like Euroclear France
   ** After acceptance of instruction, settlement confirm is produced, and then confirmed instructions are stored in the waiting queue.

Monitoring Function

Participants and clearing banks as participants' agents should be able to monitor real time settlement status at the central depository and BOJ *. By this, funds relating to settled trades will be available for transfer on the same day.

   * Through the monitoring function, a participant can find unsettled trades and make a decision to add more liquidity or to cancel the trade.
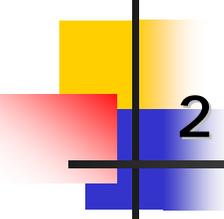
2 - 2- 2 Assumptions for Materialization (1/2)

1. Measures for Early Materialization

Simplified Functions

Firstly provide basic functions for issuance, secondary trades and redemption of electronic CP. Functions such as settlement limit control to keep liquidity and automatic execution of a repo trade with securities collateral should be provided later on a step by step basis.

Consider practical solutions for the introduction of the settlement confirm and T+0 settlement functions, observing other existing settlement systems

Central Depository's Services

Functions should be supplied through the terminal * of the central depository's system at the initial stage as expected trade volume and participants are not so many. Since system development of a CPU interface needs time and costs, it should be gradually introduced **. In order for issuers and investors to be able to join, it is a requirement that simple and inexpensive services should be supplied.

> * Even in case of through-terminal services, a sufficient security level for the settlement infrastructure should be kept. Concrete technical issues are to be investigated in the planning of the system following this Grand Design.

> ** It is anticipated that multiple levels of accounts will be permitted in the expected revisions of the law. Therefore, it is more reasonable to get such multiple levels of accounts as a base when designing the system and the CPU interface between the central depository and participants/clearing banks after the new legal regime becomes clear.

Consideration onto Existing Systems

In order to reduce the burdens on dealers and clearing banks in the early stages after introduction, we will consider more practical system procedures modeled on the existing settlement systems, including BOJ Furiketsu JGB RTGS DVP. However, attention needs to be paid so that the practical solutions will not prevent the transfer to an ideal scheme for the settlement system.
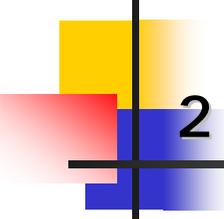
2. Consideration of Future Changes in Legal Scheme

Expansion of Holding Methods

The current Electronic CP Law assumes a single level of accounts. This analysis is made on the assumption that multiple levels of accounts are legally allowed. However, in either case, the procedures are considered assuming a clearing bank can be an agent of a participant (or account manager *) **

* Account manager: a financial institution having an account at the central depository to settle CP trades for third parties

** In the case of a single level, a clearing bank sends instructions for each participant and confirms balances by participant. But in the case of multiple levels, an account manager may administer account balances internally. Thus, a clearing bank can send instructions as its own instructions and reconcile balances as such. Legal regime changes need to be watched when establishing practical procedures.

Improvement of Coupon Payment Functions

For coupon payment, it is necessary to decide who are the beneficial owners and how much their positions are on the coupon payment date. The central depository calculates * coupon amounts based on the balances of the last trading date (or one day before the coupon payment date) and pays beneficial holders' (or their agents) bank accounts **. (institutions controlling beneficiaries accounts follow similar processes to pay to the holders' accounts by book entry transfer)

* Currently need to separate exempt and taxable positions, and collect withholding tax in proportion to the length of possession in the case of a taxable position: these complicated procedures result in inefficient operational burdens. To make the central depository's tasks efficient, it is necessary to request authorities to allow the central depository not to withhold tax (each account manager or participant will do so)

** Coupon interest and redemption money should be automatically transferred to a cash account previously designated by each member's SSI Standing Settlement Instruction . By this, in principle it will no longer be necessary to submit "Designation of Coupon/Redemption Money Receiving Account" at issuance and "receipts of coupon, etc."
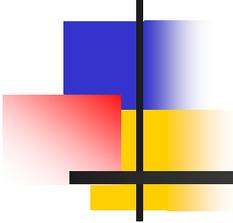
3. Grand Design - Aimed Directions

3 - 1. Issuance

3 - 1 - 1. Basic Scheme

3 - 1 - 2. Realization of DVP at Issuance

3 - 1 - 3. Security Code Assignment

3 - 1 - 1. Basic Scheme (1/3) - Direct Paper

Issuer informs agent and clearing bank of trade details (in case of direct participant, only informs clearing bank)

Investor informs agent and clearing bank of trade details (in case of direct participant, only informs clearing bank)

Issuer

Issuance Conditions Decided

Investor

Issuance Instruction

Provisional Issuance App.

Central Depository

Sec. Code Info

Trade Confirm

Issuer or Issuer's Agent

Sec. Code Info.

Sec. Code System

Settlement Inx.

Investor or Investor's Agent

Matching Result

Inx. Matching

Matching result

Report of Receipt

New Registration

Registration Notice

Report of Payment

Registration Notice

Settlement

Issuer's Clearing Bank

Investor's Clearing Bank

Transfer Completion Report

BOJ

Settlement Control

Transfer Completion Report

Report of Receipt

Fund Transfer

Report of Payment

Issuer

Matching result should be informed to both securities agent and money clearing bank

Investor

Issuance conditions are decided by the issuer and investor (underwriter of whole position)

Issuer and investor inform their agents respectively of the trade details

Issuer sends the central depository the provisional issuance application (with new security code request)

New security code is reported to the issuer and investor by the central depository

Investor sends the central depository an settlement instruction (cash payment inx.)

A reconciliation between the provisional issuance application in   and settlement instruction in   is done and the matching result is informed to both parties (including clearing banks)

A DVP settlement is done between the central depository and BOJ (if necessary, payer's clearing bank releases payment instruction)

Result of fund transfer is informed

New CP registration notice is sent to both parties

Finally settlement completion is informed to the issuer and investor

3 - 1 - 1. Basic Scheme (2/3) - Dealer Paper
(Dealer = Clearing Bank)

If the underwriter is the issuer's clearing bank, there is no book entry fund transfer at BOJ (The chart below assumes that the underwriter is also the issuer's agent)

Issuer

Issue Conditions Decided

Central Depository

Sec. Code System

Provisional Issuance Application

New Sec Code

Internal Book Entry Transfer

Dealer (Underwriter)

Clearing Bank (Issuer Agent)

In case of Payment Bank = Receiving Bank, the fund transfer at BOJ is omitted. Registration is made immediately

Central Depository

Inx. Matching

New Registration

Settlement Instruction

Matching Result

New Registration Notice

Issuer

Settlement Completion Report

In principle, issuer has nothing to do after issuance conditions are agreed

Dealing section is separated from settlement section in the bank. So matching is made internally

- 3-4 -

Issuance conditions are agreed between the issuer and dealer (= underwriter): as dealer is also the clearing bank, the issuer does not need to send issuance instruction

The clearing bank sends the central depository a provisional issuance application and security code number request with "no settlement confirm necessary" and "no fund transfer necessary"

New security code is informed to the requestor

Payment to the issuer is made by internal fund transfer in the clearing bank

Immediately the dealer sends settlement instruction to the central depository

Result of matching between the provisional issuance application in   and settlement instruction in   is sent to the clearing bank (dealer) (settlement instruction is regarded as payment instruction release to BOJ in the direct paper case)

New registration is informed to the dealer (being the issuer's agent also)

The issuer is informed that issuance has been completed

Issue Conditions

Investor

Trade Confirm

Sec. Code

Investor or Investor's Agent

Dealer (Underwriter)

Settlement Instruction

Central Depository

Settlement Instruction

Inx. Matching

Matching Result

Matching Result

Transfer

Status Inquiry

Settle. Status Inquiry

Settlement

Payment Inx

Investor's Clearing Bank

BOJ

Settlement Control

Fund Transfer

Settle Completion Report

Settlement Completion Report

Completion Report

Issuance side: on the previous page

Distribution Side

Investor side procedures are basically the same as for a secondary market purchase

Investor

© Corporate Finance and Treasury Association of Japan

Issuance

Issue conditions: decided by issuer and dealer (underwriter)

Issuer informs its agent of the conditions (If issuer administers issue operations, needs to send receipt inx. to clearing bank)

Issuer's agent sends the central depository a provisional issuance application (with sec code request): also used for settlement confirm

Sec code is informed to requestor and dealer

Dealer sends the central depository the settlement instruction (fund payment inx.)

Reconcile between provisional issue app. in   and settlement inx. in   : matching result is informed to both parties (including clearing bank)

Regarding matched instructions, DVP settlement between the central depository and BOJ is made (new registration upon payment completion)

BOJ sends settlement completion report

New Registration Notice is sent to the issuer's agent and dealer

Issuance completion report is sent to the issuer

Distribution

Dealer and investor decide new issue trade conditions

Investor informs clearing bank (investor's agent) of the execution details

Clearing bank (investor's agent) receives new sec code from the dealer (or the central depository)

Dealer and clearing bank send settlement instruction to the central depository (upon confirm of new registration made, dealer sends it)

Instruction matching result is sent to the dealer and clearing bank by the central depository

Regarding matched instruction, DVP settlement is made between BOJ and the central depository

BOJ sends both parties settlement completion report

Settlement status inquiry is available at any time

Investor is informed of the settlement completion

(Processes from   are the same as for the settlement of a secondary trade. Details will be summarized later)

To realize DVP of payment and new position creation at issuance, the following procedures are required:

| Sec. Code - Instruction Matching | Queuing | Fund Settlement | New Reg. |

Issuer / Agent
- Provisional Issue App.
- Matching Result
- Registration Notice

Clearing Bank
- Matching Result
- Confirm Fund Trans.
- Credit Issue A/C

New Registration Application is regarded as settlement inx. at issuance; take the same confirm procedures as secondary trades'

Upon receipt of fund transfer completion report, credit Issuer's A/C

Central Depo. (Code /Matching)
- Sec. Code Assigned
- New Pos. Pro. App.
- Matching Inx.

Settle. Control

New issuance is deemed as one of regular settlement items and included in settlement waiting queue for DVP settlement (not need order change)

Upon fund transfer (payment), provisional application is deemed as official application for registration

Central Depo. (New Registration)
- Sec. Trade Queue
- New Registration

If multiple underwriters, some matching method is to be devised, as not one but many payments are made

Over Time Limit

BOJ
- Fund Item Queue
- Cash Bal. Check
- NG / OK
- Fund Transfer

Dealer = Underwriter
- Code Notice
- Settlement Inx.
- Confirm Fund Trans.
- Registration Notice

Same structures among issuance, secondary trades, redemption/coupon payments

(Numbers in the above correspond to those in the previous page and describe the flow from Provisional Issuance Application to New Registration)

In addition, the following two methods can be utilised to realize new issuance DVP settlement (but possibility of these seems lower so detailed study is not made):

Plan 1. Pos. Creation in Agent A/C ---> Dealer Payment

Agent: Issuance Notice → New Registration → Settlement Inx. / Regular DVP Settlement

CD: Sec. Code Assigned → C. Bank New Pos → Matching → Security Settlement

BOJ: Cash Settlement

Dealer: Sec. Code Notice → Settlement Inx.

Issuer's Agent makes advance payment, resulting in new registration. The new position is settled DVP with Dealer like a regular secondary trade settlement. Agent has a rather big amount to advance: the cost (equivalent to the risk) is charged to issuer. Practically, it is a rather difficult method.

Plan 2. Central Depository's A/C in BOJ for Payment

Agent: Issuance Notice / Fund Trans. Completion Notice

CD: Sec. Code Assigned → Confirm Receipt → New Pos. Transfer Inx.

BOJ: Credit CD A/C / C. Bank A/C Fund Transfer

Dealer: Sec. Code Notice → Payment → Registration Notice

Dealer makes payment to the Central Depository's BOJ A/C specified for the new issue. CD registers the new CP upon confirm of receipt and sends BOJ payment instruction to Clearing Bank (quasi-escrow) Registration is made before payment to issuer; CD conducts money exchange business which poses a legal question   difficult method to practice

3 - 1 - 3. Security Code Assignment

To issue E. CP quickly, security code assignment should be automated. Code structure is planned:

E. CP Code Assignment Method (Plan)

1. Assumptions

Following global standards, take ISIN Code model
Not to confuse the current ISIN Code structure (see the right column), create new structure
Even if a certain company issues a lot of CP, the code structure should absorb the issues (no. of companies will not be so many but no. of CP issues per company will be a lot)
To allow immediate automatic code assignment, the structure should be simple

2. Electronic CP Code Structure (Plan)

ISIN Code

Country Code	Common Code	Check Digit

Attribute Code	Serial Number Code (8 digits)

Country Code: "J P" if issued in Japan
Attribute Code: Use a number which is not used now
Serial Number Code: random serial number without any meaning (issuer code needs to be retained)

* if there are multiple code assignors, need some arrangements: e.g. different attribute code, first digit of serial number code part is allocated to separate assignors)

(FYI) Current Corporate Bond Code Structure

1. Bond Code (9 digits)

Supple. Digit   Series NO   Issuer Code

Issuer Code: Same as Equity Code Number (4 digits)
Series no.:   Code assigned depending on bond number, year, etc.
Supple. Digit: to distinguish CB, Warrant Bond, etc.

New Security Code (12 digits)

ISIN Code

Country Code	Common Code	Check Digit

		Issuer Code	Product Type Code	

Attribute Code	Issuer Code

Country Code: if issued in Japan, it is "J P"
Attribute C.:   If issued by resident, it is "3" (public companies, etc.)
Issuer Code: 5 digit code in Japanese alphabetical sequence
Pro. Type Code: Serial no. + Year Code + Month Code
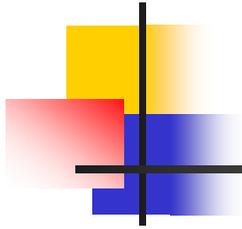
3 - 2. Secondary Trades

- 3 - 2 - 1. Basic Scheme

- 3 - 2 - 2. Realization of DVP

- 3 - 2 - 3. Queuing Function

- 3 - 2 - 4. Instruction Matching and SSI

- 3 - 2 - 5. Variation of Settlement

3 - 2 - 1. Basic Scheme
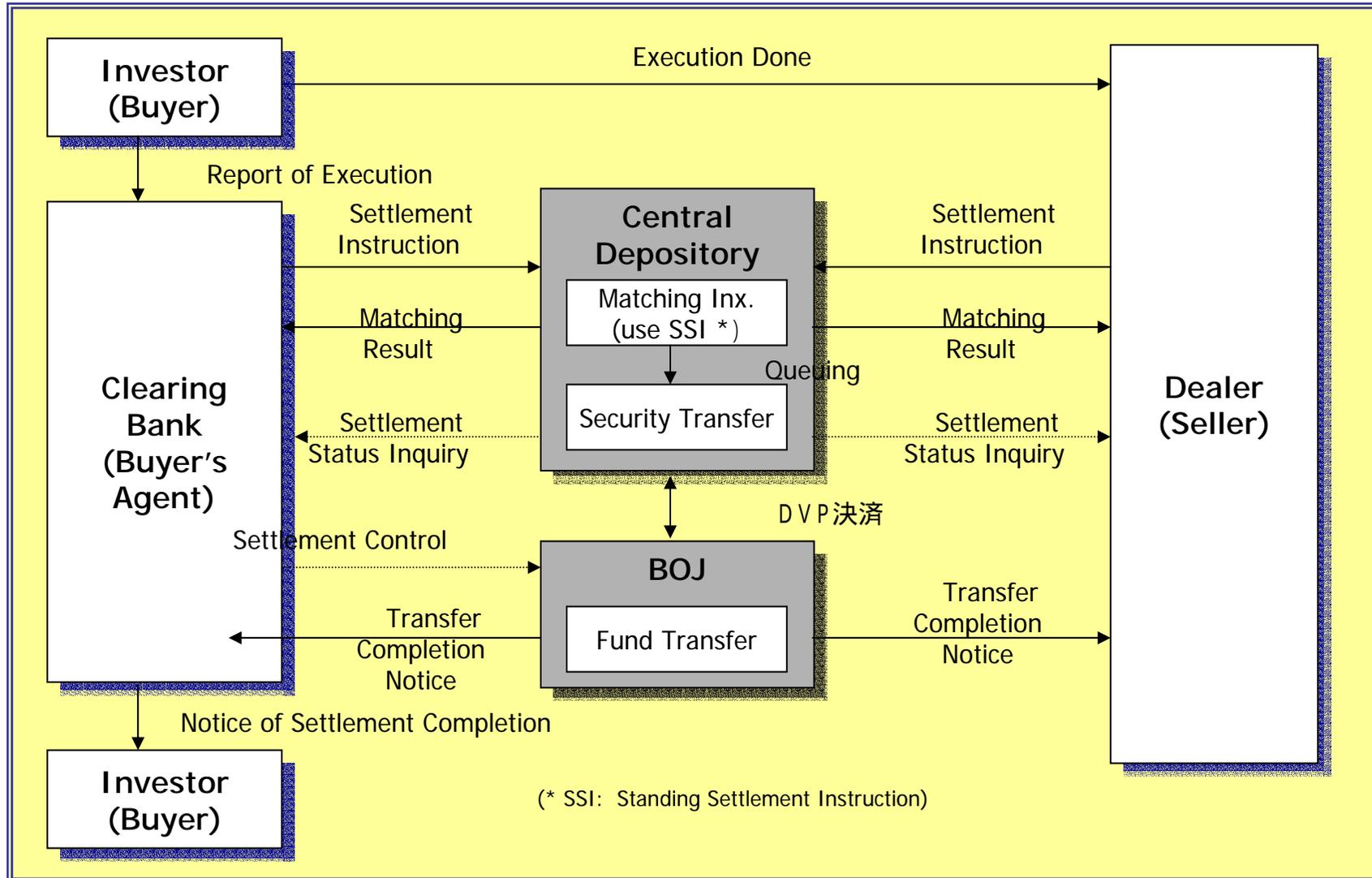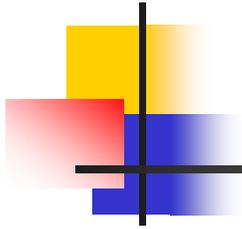
Trade details are agreed by the Investor and Dealer

Investor informs the Clearing Bank of the trade details (including settlement instruction)

Clearing Bank and Dealer respectively send settlement instructions to the Central Depository (determine fund settlement account by SSI)

Confirm the instruction matching report

Matched instructions are put into the queue waiting for settlement

On the settlement date, the trade is settled DVP between the Central Depository and BOJ

BOJ informs both parties of the fund transfer completion

Can inquire about the settlement status on-line

Settlement Completion Notice is given to the Investor

3 - 2 - 2. Realization of DVP

Propose the following scheme to absorb the expected trade volume increase:

Numbers in the chart correspond to those in the previous page to show the flow of instructions and trade settlement
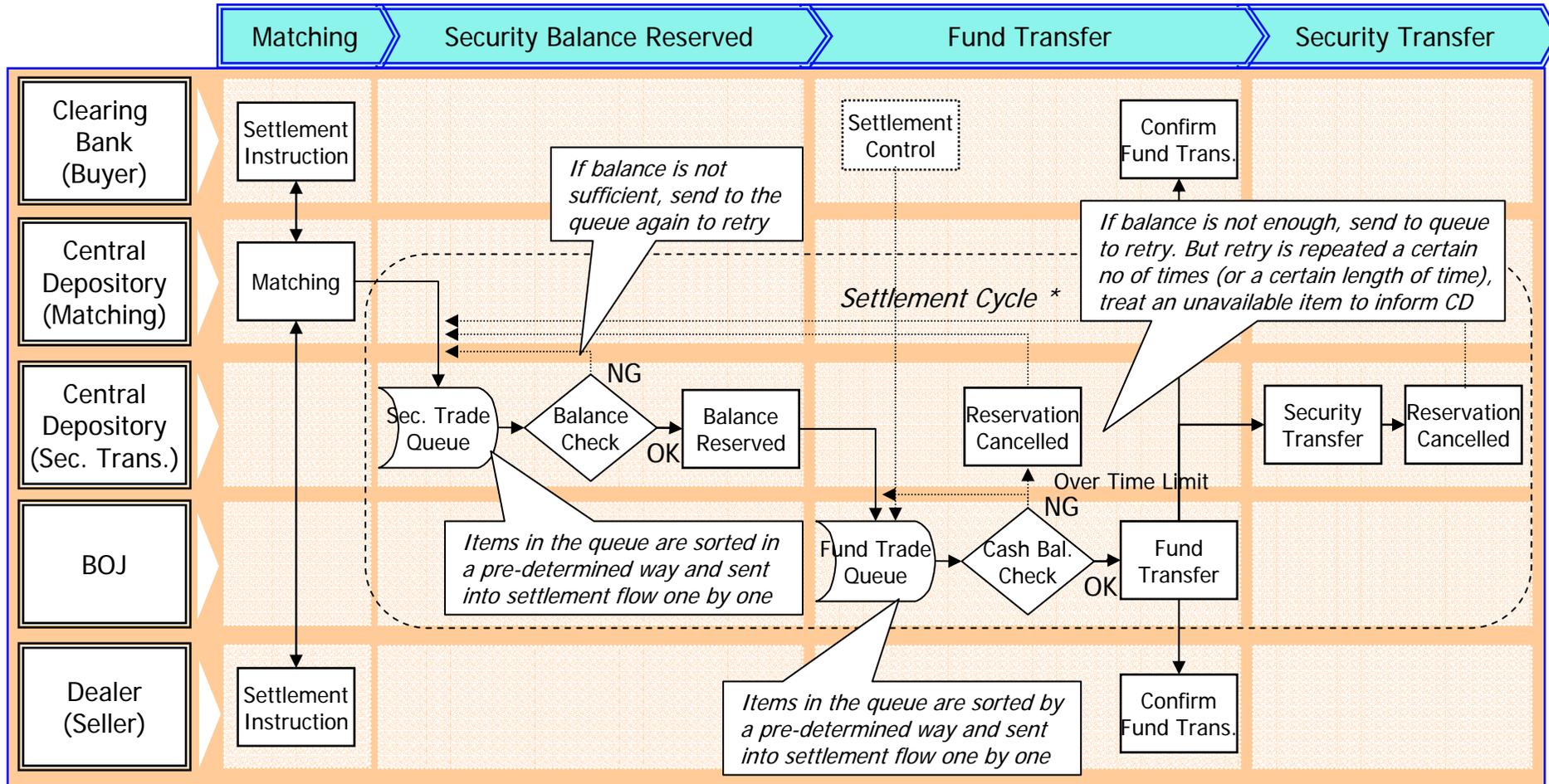
* As to what a unit of settlement cycle is (e.g. upper limit of waiting items in Sec. Trade Queue, Time Limit, etc.), need a concrete investigation when planning it. Also need to study conditions of Over Time Limit in the BOJ's Fund Trade Queue.

3 - 2 - 3. Queuing Function (1/3)
- Security Settlement Queuing

Without Queuing Function

If a lot of trades come in and queuing function is not prepared, the system has to check balance and then send settlement instructions one by one. Thus there must be a limitation to process them (trade volume increase cannot be absorbed)

If retry function is not prepared, all items for which balances are not sufficient at the balance check timing will be returned as errors. There must be many errors created

(participant's internal procedure)

Sorting (Prioritized) ┄┄> Settlement Instruction

Settlement Cycle

Balance Reserved → Fund Settlement → Security Transfer

NG → Fail Notice (Insufficient Money Balance)

NG → Fail Notice (Insufficient Sec. Balance)

With Queuing Function

Prioritization of settlement items is necessary. It can reduce fails and loops (more efficient settlement)

Sorting Method (to consider further)
Like JGB ITC DVP(*), a smaller amount item is to be prioritized
Follow deliverer's prioritization
Item with balance available is to be settled earlier
First in first settle
A bigger amount item is to be prioritized (consider chaining trades)

(*) JGB ITC DVP: JGB DVP with simultaneous collateral deposit / withdrawal. BOJ calls the function ITC (in-transit collateral) DVP.

(from Instruction Matching System)

Insufficient Sec. Balance

Matched Instruction
Matched Instruction
Matched Instruction

→ Sec. Trade Queue →

Settlement Cycle

Sorting (Prioritized) → Prioritized Queue → Balance Reserved → Fund Settlement → Security Transfer

Insufficient Money Balance (Over Time Limit)

Central Depository

Money Instruction
Money Instruction
Money Instruction

BOJ Current A/C (RTGS)

Over Time Limit

Counterpart's Insufficient Balance

Fund Trade Queue *

Fund Trade Queue *

In the case of regular fund transfer, only receiver is informed of the transfer completion. Need to send the notice to both receiver and payer in the case of Central Depository's DVP instruction

Settlement Cycle *

Sorting (Prioritized) → Prioritized Queue → Fund Transfer → Transfer Completion Notice

Insufficient Balance

Payer (CP Buyer)
Payer (CP Buyer)
Payer (CP Buyer)

RTGS Payment Instruction

Over Time Limit

Central Depository

Fund Receiver (CP Seller)

Fund Payer (CP Buyer)

Regarding the prioritization in Fund Trade Queue, the following can be thought: 1) first in first out, 2) sorting by a certain pre-determined sequence, 3) allocate time zones to the respective transaction types, etc. Details are to be discussed at the later stages

* The following methods regarding BOJ Current A/C trade queuing can be thought: 1) same conditions for all transaction types, 2) separate security trade related from regular payments (including bill clearing / Zengin systems' net settlements), etc. Need to consider these from the more efficient fund settlement view point of BOJ.

** Prioritization should be given at the onset of the Settlement Cycle and follow the decided orders to settle: aiming to shorten the time necessary resulting in increasing efficiency of funds.
Fails due to temporary fund shortage will no longer happen due to queuing. Instead, set a time limit for retrying and items facing continuous fund shortage will be informed to the participants as "unable to settle" when it is over the time limit

A function is required for participants and clearing banks of the central depository to control the timing of settlement intra-day. Concrete functions should be planned for future operational efficiency.

Participant (Sec. Deliverer)

Temporarily suspend a settlement or change priority, if receivable sec. does not come in despite urgent delivery or due to other reasons (not able to change the details of an already matched trade)

Status Inquiry
Temporary Suspension
Release
Change Priority
Others

Sec. Queue Control

Central Depository

Sec. Trade Queue

Settlement Cycle

A matched trade in the sec. queue is sent to Settlement Cycle upon arrival of S/D in principle: Straight Through Processing (STP).
With option for participant, however, to be able to temporarily suspend all trades or a trade whose settlement was retried unsuccessfully for a certain times.
Assuming the possible increase of trade volume requiring more efficient operations, need to consider necessary functions further.

Clearing Bank (Fund Payer)

Monitor intra-day balance of BOJ current A/C and the central depository's instruction to BOJ for customer's trades (credit control) and suspend settlement if necessary (not able to change the details of an already matched trade)

Status Inquiry
Temporary Suspension
Release
Change Priority
Others

Fund Queue Control

BOJ Current A/C (RTGS)

Fund Trade Queue

Settlement Cycle

As it is less efficient to suspend all fund transfer instructions when they are stored in the fund trade queue (not STP), a function is needed to select a release or suspension by trade type (inter bank, open market, fund transfer, etc) volume amount, time of instruction receipt, etc.
Need to consider the way to realize the fund trade queue while analyzing current and future market practices regarding RTGS.

3 - 2 - 4. Instruction Matching and SSI (1/2)

To make operational procedures more efficient for T+0 settlement, it is necessary to introduce a matching system with SSI (Standing Settlement Instruction).

Data to be stored in SSI by participant
  Sec.:   Custodian, A/C NO, etc.
  Fund: Agent Bank, A/C NO. Etc.
  redeem/coupon: Agent Bank, A/C NO, etc.
  acceptable to have sub-account)

Investor (or Agent)

Central Depository Instruction Matching System

Dealer

Set-up/ Change SSI

SSI

Set-up/ Change SSI

Settlement Instruction

C.Party Check

Settlement Instruction

Yes

Matching result

Matching

Matching Result

OK

If the c.party has not released the instruction, the trade is kept waiting for c.party's instruction. The unmatched instruction is informed to the participant with an appropriate interval, considering a possible missing instruction by c.party.

Instruction Release

Matched trades, in principle, cannot be cancelled. (even if S/D is the following day or later, matched trades are to be sent to sec. trade queue and on S/D it will be settled.

Sec. Trade Queue

Central Depository Book Entry Transfer System

As mentioned before, the matching system works through 1) usage of SSI and 2) both parties' instruction inputs and matching. But we need to assume the case of either not-using SSI or one party's entry (the other's agreement)

(like JASDEC's Instruction Full Support Type*)

When not making use of SSI, need settlement conditions and information of both parties' fund and security settlement accounts

In general, dealer inputs instruction. Between institutional investors, a rule that deliverer inputs should be set up.

Central Depository Instruction Matching System

Investor (or Agent)

| Confirm of Inx. |

| Matching Result |

| Sending/ Receipt of Instruction |

| Sending/ Receipt of Confirm |

OK

| Instruction Release |

Sec. Trade Queue

Dealer

| Settlement Instruction |

| Matching Result |

Central Depository Book Entry Transfer System

* Data flow is basically modeled on JASDEC's trade matching system. But the format of settlement message needs to follow global standards and to be determined referring to the discussions about ISITC introduction for JASDEC settlement

3 - 2 - 5. Variation of Settlement (1/4)
- Dealer = Settlement Agent

If the Dealer is also an agent of the Buyer, it is not necessary to physically transfer funds at BOJ. Confirming security transfer at Central Depository, the funds are transferred by book entry in the Dealer.

Investor (Buyer)

Trade Execution →

Central Depository

Instruction

' Instruction

Instruction Matching

↓

Security Transfer

Matching Result

Dealer (Seller & Buyer's Agent)

If Investor's clearing bank is Dealer himself, fund settlement is done in the clearing bank by book entry (not via BOJ). Central Depository sends Clearing Bank a fund transfer instruction

Fund Transfer Inx.

Internal Fund Transfer

Investor

Settlement Completion Notice

Book entry fund transfer in Dealer is made after Fund Transfer Instruction reached. Although the transfer on S/D is ideally possible given the Matching Result, it should not be judged before S/D. Then suggest the timing of for actual transfer.

Trade details are agreed by Dealer and Investor

Dealer sends instructions as agent of Buyer and for dealer's own settlement as seller

(or it should be acceptable to send consent to an instruction)

Matching result is informed

In the case of Deliverer's clearing bank = receiver's clearing bank, Central Depository does not send instruction to BOJ but to the clearing bank.

(DVP settlement at BOJ is not required, so at this time, book entry transfer is done)

Transfer funds from Investor's A/C to the bank's own account by internal book entry transfer

Settlement completion notice is sent to Investor

© Corporate Finance and Treasury Association of Japan

- 3-21 -

When multiple levels of accounts are permitted, there is no need to transfer the position in the Central Depository as the right transfer is done by internal book entry in the Account Manager. No DVP between Central Depository and BOJ
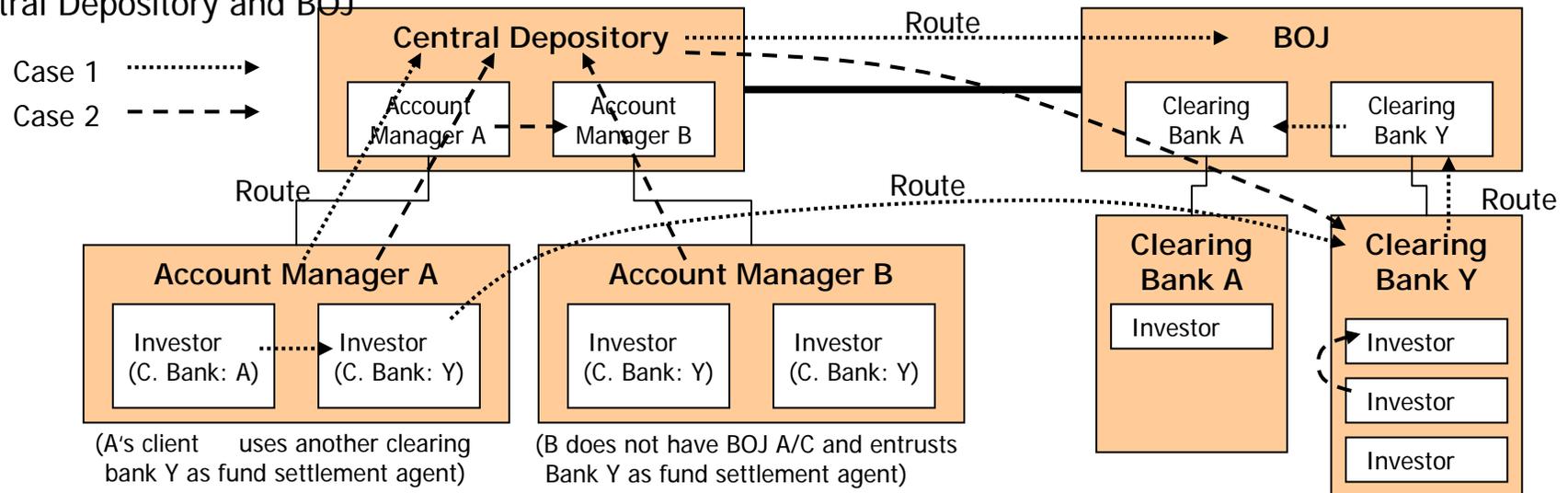
Case 1. Investor   is the deliverer and Investor   is the receiver
Sec. transfer is completed in Bank A by book entry. No need to settle at Central Depository
Fund transfer should be done between Investor   's agent bank Y to Bank A: like regular settlement. Central Depository sends instruction to BOJ (Route   ), or Investor   directly instructs Bank Y for transfer (Route   ).
Clearing Bank A credits the funds to Investor   's A/C upon receipt of fund transfer completion notice by BOJ.

Case 2. Investor   is the deliverer and Investor   is the receiver
Sec. accounts are respectively held by A and B. Thus a regular settlement instruction is sent to Central Depository
Central Depository, after matching, transfers the sec. from A's to B's A/C. (A and B record the position changes)
As deliverer and receiver use the same bank for fund settlement, Central Depository sends instruction to Bank Y.
Bank Y internally transfers the funds from Investor's A/C   to Investor's A/C   .

Security (S) and fund (F) settlement patterns under multiple levels of accounts are as follows:

Case	Investor A (Buyer)	Dealer B (Seller)	Security Settlement Method	Fund Settlement Method
1	S: entrust B F: entrust B	S: own A/C = B F: own A/C = B	As Buyer's agent is Seller, matching between A and B is not necessary. (done by internal book transfer)	B transfers funds from Customer A's A/C to its own A/C internally (same as the case of Dealer = Settlement Agent on p. 3-21)
2	S: entrust B F: entrust C	S: own A/C = B F: own A/C = B	Same as Case 1	(in principle, same as Case 1 on p. 3-22) 　Two possible ways: 1) B sends BOJ the instruction via C, or 2) A asks C to send BOJ the instruction
3	S: own A/C = A (direct) F: entrust C	S: own A/C = B F: entrust C	Instructions are sent by both A and B to the central depository 　Central Depository settle the trade by book entry transfer after matching	(in principle, same as Case 2 on p. 3-22) 　Central Depository does not send BOJ the instruction but Clearing Bank C 　C transfer funds from A to B A/C
4	S: own A/C = A (direct) F: entrust C	S: own A/C = B F: entrust D	Same as Case 3	Central Depository sends BOJ Inx. 　BOJ transfers funds from C to D A/C 　D transfers the funds to B's A/C
5	S: entrust C F: entrust C	S: own A/C = B F: entrust C	A informs Clearing Bank C of trade booked 　Instructions are sent from Dealer B and Clearing Bank C to Central Depository 　Central Depository settles the trade DVP as usual after matching	Same as Case 3
6	S: entrust C F: entrust E	S: own A/C = B F: entrust D	Same as Case 5	Same as Case 4

(In cases that multiple fund settlement methods can be expected, like Cases 2, 3 and 5, detailed study, including efficiency analysis, is needed)
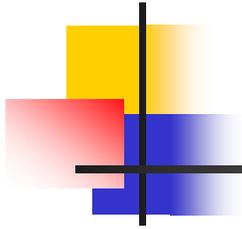
Explanations of the cases on the previous page

Case 1: Investor A (an indirect participant of the central depository) buys from Dealer B (a direct participant having both sec and cash accounts). A entrusts B as its custodian for both security and cash.

Case 2: Investor A (an indirect participant) buys from Dealer B (a direct participant having both sec and cash accounts). A entrusts B as its security custodian and designates C as its fund clearing bank.

Case 3: Investor A (a direct participant having only sec account) buys from Dealer B (a direct participant having only sec account). A entrusts C as its fund clearing bank. Also B designates C as its fund clearing bank.

Case 4: Investor A (a direct participant having only sec account) buys from Dealer B (a direct participant having only sec account). A entrusts C as its fund clearing bank. However, B designates D as its fund clearing bank.

Case 5: Investor A (an indirect participant) buys from Dealer B (a direct participant having only sec account). A entrusts C as its custodian for both securities and cash. B designates C as its fund clearing bank.

Case 6: Investor A (an indirect participant) buys from Dealer B (a direct participant having only sec account). A entrusts C as its custodian of security and E as its fund clearing bank. On the other hand, B designates D as its fund clearing bank.

3 - 2 - 5. Variation of Settlement (4/4)
- Structure of Settlement Network (Plan)

In order to build up an efficient settlement network with multiple levels of accounts, it is necessary that the Central Depository is located in the center of the system and the many account manager participants (and clearing banks) are linked to the master star like companion stars.

Compared with individually linked network, Account Manager Participant method has the advantage that it manages the settlement instructions (messages), as Account Manager Participant will only send/receive messages to/from Central Depository and BOJ.

When current account fund transfer is necessary at BOJ for security trade settlement, usually instructions reach BOJ via Central Depository

If an investor's clearing bank is different from security custodian, it should be possible to inform the investor's clearing bank of the investor's settlement instruction via the Central Depository
(it is feasible to centralize the flow of fund settlement information)

A/C Manager Participant & Clearing Bank

A/C Manager Participant & Clearing Bank

Central Bank (BOJ)

Issuer

Central Clearing Depository

A/C Manager Participant & Clearing Bank

Investor

Issuer

Investor

A/C Manager Participant

A/C Manager Participant

Investor

Investor

Investor

Investor

Investor

Investor

3 - 3. Redemption/Coupon Payment

3 - 3 - 1. Basic Scheme

3 - 3 - 2. Realization of DVP

3 - 3 - 3. Redemption/Coupon Payment under Multiple Levels of Accounts

Issuer

As holders' positions are held in the A/C Ledger of Central Depository in the case of regular coupon / redemption payment, it is not necessary for investors to send payment instructions (when expanding functions to cover electronic bond registration / settlement, need to study early redemption)

Inform of Scheduled Coupon/Redemption

Central Depository

Request of Payment

Cum-Right Balance Check

Matching Result

Matching Result

Deletion

Paying Agent (Issuer's Clearing Bank)

Investor's Agent (Investor's Clearing Bank)

' Settlement Control

Settlement

BOJ

Fund Transfer

Notice of Transfer Completion

Notice of Transfer Completion

Notice of Payment Completion

Notice of Receipt

Issuer

Investor

Paying agent informs Issuer of the scheduled coupon / redemption in advance

Paying agent sends Central Depository coupon / redemption payment request*

Central Depository reconciles on the record day** a/c balance with payment request and informs clearing banks of issuer and investor of the result

On the payment date a DVP settlement is done between BOJ and Central Depository (Sec: deletion of open item)

Fund transfer result at BOJ is informed

Agents informs issuer and investor of the payment completion

* Application for position deletion due to redemption is to be made by each holder participant. But Central Depository should be able to delete these based on issuer's (or paying agent's) payment request and the receipt of the funds by all participants' inclusively entrusting CD with the application.

** Cum-right balances are confirmed of course at the close of business on the last tradable date which is determined for each issue.

3 - 3 - 2. Realization of DVP

The position balance check is done at payment request matching (against cum-right balance) in the case of coupon / redemption payment. No balance check, reservation, balance release are made in the settlement process.

Matching	Queuing	Book Entry Fund Transfer	Deletion

Paying Agent
- Payment Request
- Settlement Control
- Confirm Fund Trans.

Central Depository (Matching)
- Cum-right Balance Check

In the same way as New Registration Application, DVP settlement of Coupon / Redemption is done through Security Trade Queue to unify the data flow

Central Depository (Sec. Transfer)
- Sec. Trade Queue
- Deletion

Over Time Limit

BOJ
- Fund Trade Queue
- Cash Bal. Check — NG / OK
- Fund Transfer

Investor's Clearing Bank
- Matching Result Confirm
- Confirm Fund Trans.
- Transfer to Investor's Account

As there is no matching process with investor at the coupon / redemption payment, receivable A/C (automatically selected by SSI) & amount are checked here

(Numbers in the above chart correspond to those in the previous page and describe the flow from request to deletion)

© Corporate Finance and Treasury Association of Japan

3 - 3 - 3. Redemption/Coupon Payment under Multiple Levels of Accounts

Coupon interest / redemption money are paid on the payment date to investors (actual holders) via Account Manager Participants (or their Clearing Banks) by the Central Depository (no necessity for investors' individual payment requests)
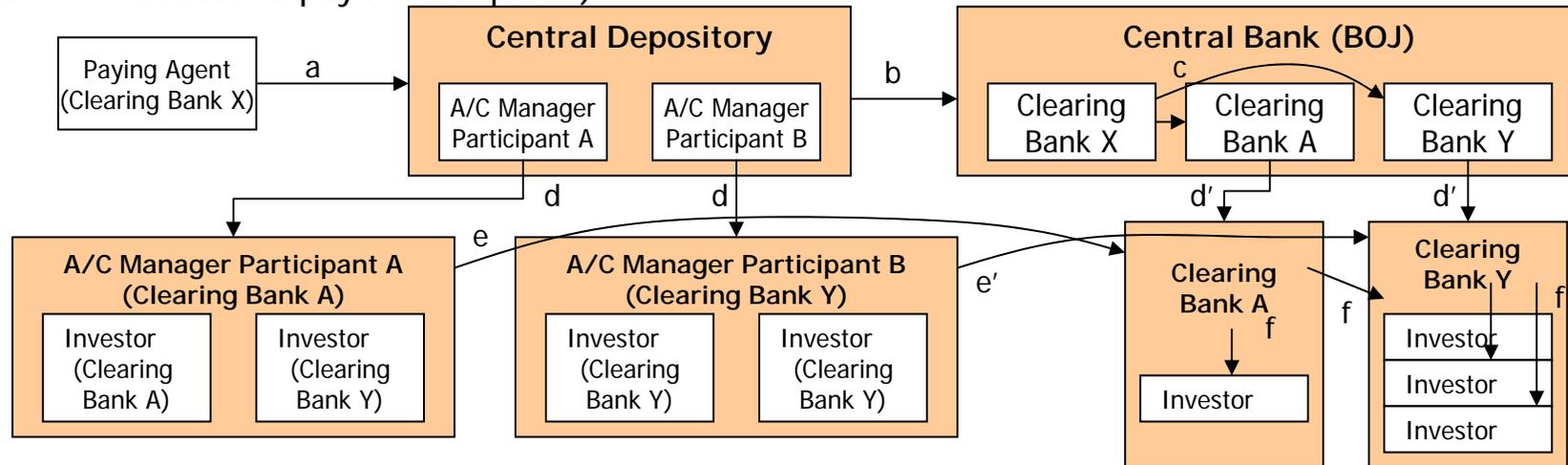
Payment in the account levels within Central Depository (Paying Agent → Account Manager Participants)
- a. Clearing Bank X (Paying Agent of Issuer) sends Central Depository the coupon/redemption payment request
- b. Upon receipt, Central Depository instructs BOJ to pay funds based on the respective participants' cum-right balances (receiving bank/account of participant should be registered in Central Depository's SSI record)
- c. BOJ transfers funds from Paying Agent's A/C to the respective participants' accounts following the instruction
- d. Central Depository and BOJ inform A/C Manager Participants / Clearing Banks of the fund transfers

Payment in the account levels within A/C Manager Participant (A/C Manager Participant → Investor)
- e. Upon receipt of Central Depository's notice, A/C Manager participant instructs Clearing Banks to transfer funds to investors' accounts proportionally to their cum-right balances* (Investors receiving banks/accounts should be registered in A/C Manager Participant's SSI record)   (* in the case that A/C Manager Participant is not a clearing bank, like B, it needs to receive information from Clearing Bank Y)
- f. Clearing Banks transfers funds to investors' accounts following the instructions
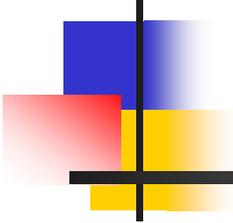
4. Short Term Solution

4 - 1. Purpose of the Short Term Solution

4 - 2. Operational Flow of the Short term Solution

    4 - 2 - 1. Issuance Scheme

    4 - 2 - 2. Secondary Trades Scheme

    4 - 2 - 3. Coupon Payment / Redemption Scheme
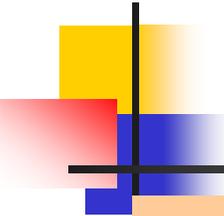
4 - 1. Purpose of the Short Term Solution

Restrictions to Realization of Grand Design (Aimed Direction)

In order to implement the Grand Design, not only do the Central Depository and BOJ but also participants, such as securities companies, banks, etc. need to develop systems to meet the new settlement infrastructure. Also, it probably will take two or three years to complete the new infrastructure.

In order to realize the new RTGS- DVP settlement functions, it is necessary to consider not only security trade related matters but other fund transfers. It must take a longer time to determine the scheme.

Regarding system infrastructure for realization of the Grand Design, it may be necessary to consider an integration with settlement systems other than electronic CP's. Accordingly, it is desirable to study it together with the currently developed JASDEC general DVP settlement system for equities.
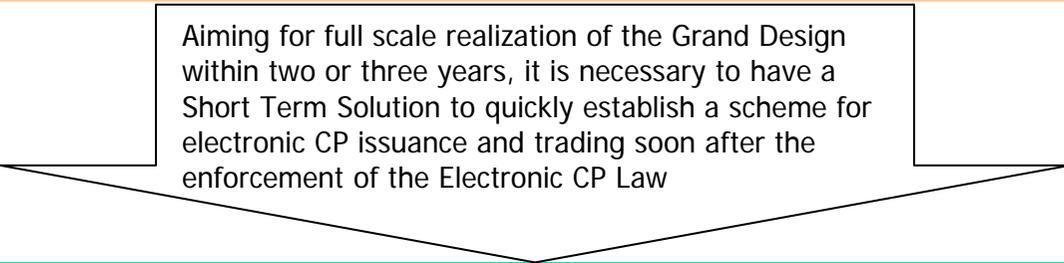
Aiming for full scale realization of the Grand Design within two or three years, it is necessary to have a Short Term Solution to quickly establish a scheme for electronic CP issuance and trading soon after the enforcement of the Electronic CP Law

User Requirements for Short Term Solution

The Electronic CP Law will be enforced in April 2002. It is necessary to build up a scheme to issue / trade electronic CP as early as possible. More concretely, aim to start it within a year.

A simple and convenient system is desirable (which the current settlement system's expansion can cover) so that participants should not bear so much expenditure, even if trade volume in the initial stage is low.

However, a system with the RTGS DVP settlement function is to be supposed in order to reduce settlement risks.

(Expansion requirements after the Short Term Solution is completed)

Legislation for security of settlement and multiple levels of accounts will be made in 2002. Need to consider this.

System for electronic bond issuance/trading should be completed by enforcement of the Book Entry Transfer Bond Law (tentative name, expected in early 2003)

Need to build a system capable of issuing electronic CP on a T+0 basis by the start of Pay Off of settlement purpose deposits scheduled for April 2003

Underwriter sends subscription money payment instruction not to Central Depository but BOJ (fund transfer instruction with message) Other operational flows are in principle the same as Grand Design's

Issuer

Conditions agreed

Provisional Issue App.

Central Depository

Sec Code App.

Notice of Sec Code

Notice of Sec Code

Dealer (Under-writer)

Pre-advise of Fund Receipt

Issuer's Clearing Bank

BOJ

Payment Instruction

Fund Transfer

Notice of Fund Receipt

Notice of Fund Transfer Completion

Notice of Fund Receipt

Central Depository

New Registration

Issuer

Notice of New Registration

Notice of New Registration

(The above chart illustrates the case where Issuer does not have an Issue Agent - Dealer Paper. For other cases, the operational flow is, in principle, the same as the above chart.)
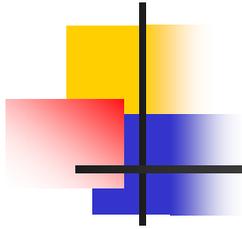
Description of Actions on the Previous Page

Issue conditions are agreed between the Issuer and Dealer (Underwriter)

Issuer pre-advises the Clearing Bank of the expected fund receipt

Issuer sends the Central Depository the provisional application for new issue (with a request for a new Security Code)

A new Security Code is informed to the Issuer and Dealer

Dealer sends BOJ a payment instruction

Upon receipt of the payment instruction, BOJ transfers the funds and informs the Issuer's Clearing Bank and Central Depository of the fund transfer completion

Upon receipt of the fund transfer completion notice from BOJ, the Central Depository registers the new CP based on the contents of the provisional issuance application in the above

Central Depository reports Issuer and Dealer about the newly registered CP

Issuer's Clearing Bank advises the Issuer of the receipt of subscription money (credited to the Issuer's A/C)

	Issuance Advise	Fund Payment / Confirm	New Registration / Confirm

Issuer / Issuer's Agent
- Provisional Issue App.
- Notice of New Registration → Notice to Issuer

Clearing Bank
- Notice of Transfer Completion → Transfer to Issuer's A/C

Central Depository (Sec. Coding)
- Sec Code Assignment → Provisional App. For New. Reg.

Inform by Transfer Inx. Message of payment to Issuer's designated A/C

Inquire the provisional new registration App. By the Ref. NO of Transfer Completion Notice

Central Depository (New Reg.)
- Notice of Transfer Completion → Confirm New Reg. App. (*) → New Registration

BOJ
Details of New Registration should be checkable in advance

- Fund Transfer

Transfer Inx. with Message for New Electronic CP Issuance is sent to the Central Depository simultaneously

Dealer (Underwriter)
- Sec Code Notice / Confirm ⋯⋯> Transfer Instruction

In the Message Column, Ref. no. to New Reg. App. Should be added

- Confirm of New Reg. Notice

* If there is no New Registration Application corresponding to the Reference no. added in the Message Column of Fund Transfer Instruction when confirming New Registration Application, both fund payer and receiver will be informed of the invalid new registration.

(The numbers in the above chart correspond to those in the previous page and describe the flow from Provisional Issuance Application to New Registration Completion)

Buyer's operational flow is different from Grand Design's: after receipt of Central Depository's Notice of Application Received, send Fund Transfer Inx to BOJ

Seller's operational flow is the same as Grand Design's except settlement confirm not via Central Depository

Investor (Buyer)

Conditions agreed

Trade Advise

Settlement Confirm

Notice of Settlement Instruction Received

Central Depository

Settlement Inx.

Clearing Bank (Buyer's Agent)

Settlement Inx. Received

Fund Transfer Inx.

BOJ

Notice of Fund Transfer Completion

Dealer (Seller)

Fund Transfer

´ Settlement Status Inquiry

Notice of Position Transfer Completion

Central Depository

´ Settlement Status Inquiry

Notice of Settlement Completion

Investor (Buyer)

Sec. Transfer

Investor and Dealer agree the trade conditions

Investor advises Clearing Bank of the trade details (including settlement instruction)

Clearing Bank and Dealer confirm settlement details not through Central Depository

Dealer (Seller) sends Central Depository a Settlement Inx.

Central Depository sends Clearing Bank (Buyer) Notice of Settlement Inx. Received.

Clearing Bank (Buyer), based on the Notice, sends BOJ a Payment Instruction.

BOJ informs Dealer and Central Depository of the Notice of Fund Transfer Completion

Central Depository, based on the contents of Fund Transfer Completion Notice, reviews the relevant settlement instruction and transfers the position (settlement status inquiry should be available at any time)

Notice of Settlement Completion is sent to Investor (Buyer)

Settle. Confirm	Sec. Balance Checked	Fund Transfer	Sec. Position Transfer

Clearing Bank (Buyer)

Settlement Confirm → Notice of Acceptance → Fund Trans. Instruction

Acceptance Ref. NO

Sends a fund transfer Inx. with message for electronic CP trade settlement

Follow the settlement Inx. with the same no. as one in the message column of the Fund Trans. Completion Notice from BOJ.

Central Depository (Settle Confirm)

Central Depository (Sec. Trans.)

Settle DVP by Trade

Check Seller Sec. Bal. → Balance Reserved → Sec. Transfer → Reservation Cancelled

Both deliverer and receiver confirm the details beforehand and the deliverer releases a settlement instruction.

BOJ

Fund Transfer

BOJ receives Fund Trans. Inx. with message, transfer the fund, and releases the Notice of Fund Transfer Completed to the Fund Receiver and the Central Depository.

Dealer (Seller)

Settlement Confirm → Settlement Instruction

Notice of Fund Trans. Completed

(The numbers in the above correspond to those in the previous page and describe the flow from Settlement Confirm to Sec. Transfer)

(Note) The above scheme assumes the CPU linkage between BOJ and Central Depository. On the other hand, in the issuance scheme of the short term solution, it is possible to manually handle through terminals. The actual system structure will be fully investigated in the next phase.

Unlike the Grand Design, the operational flow of the Paying Agent is to send Fund Trans. Inx to BOJ upon receipt of Position Check Result Report from Central Depository

The operational flow of the Investor is the same as the Grand Design's

Issuer

Notice of Payment Scheduled

CPN/RED. Payment Request

Central Depository

Matching Entitlement

Matching Result

Matching Result

Paying Agent (Issuer's Clearing Bank)

Fund Transfer Inx

BOJ

Fund Transfer

Notice of Transfer Completion

Investor's Clearing Bank

Notice of Transfer Completion

Central Depository

Obligation/ Entitlement Deleted

´ Inquiry of Deletion Status of Payment Obligations

Notice of Payment Completion

Notice of Receipt

Issuer

Investor

Paying Agent (PA) informs Issuer of scheduled CPN/RED payments

PA sends Central Depository (CD) CPN/RED Payment Request

CD checks the request to the entitled positions on record date (*) and informs clearing banks of Issuer and Investors thereof

PA sends BOJ the payment instructions on payment date.

Completed transfers are reported

CD, following the contents of Notice of Fund Transfer Completion, deletes CPN/RED entitlement items after confirming deletion App. (status can be inquired at any time)

The respective clearing banks report the payment/receipts completion to Issuer (A/C credited) and Investors respectively (Deletion of Obligation).

*) Treatment of Deletion Applications (Participants entrusted CD inclusively) and the way to confirm the entitled positions are the same as Grand Design's
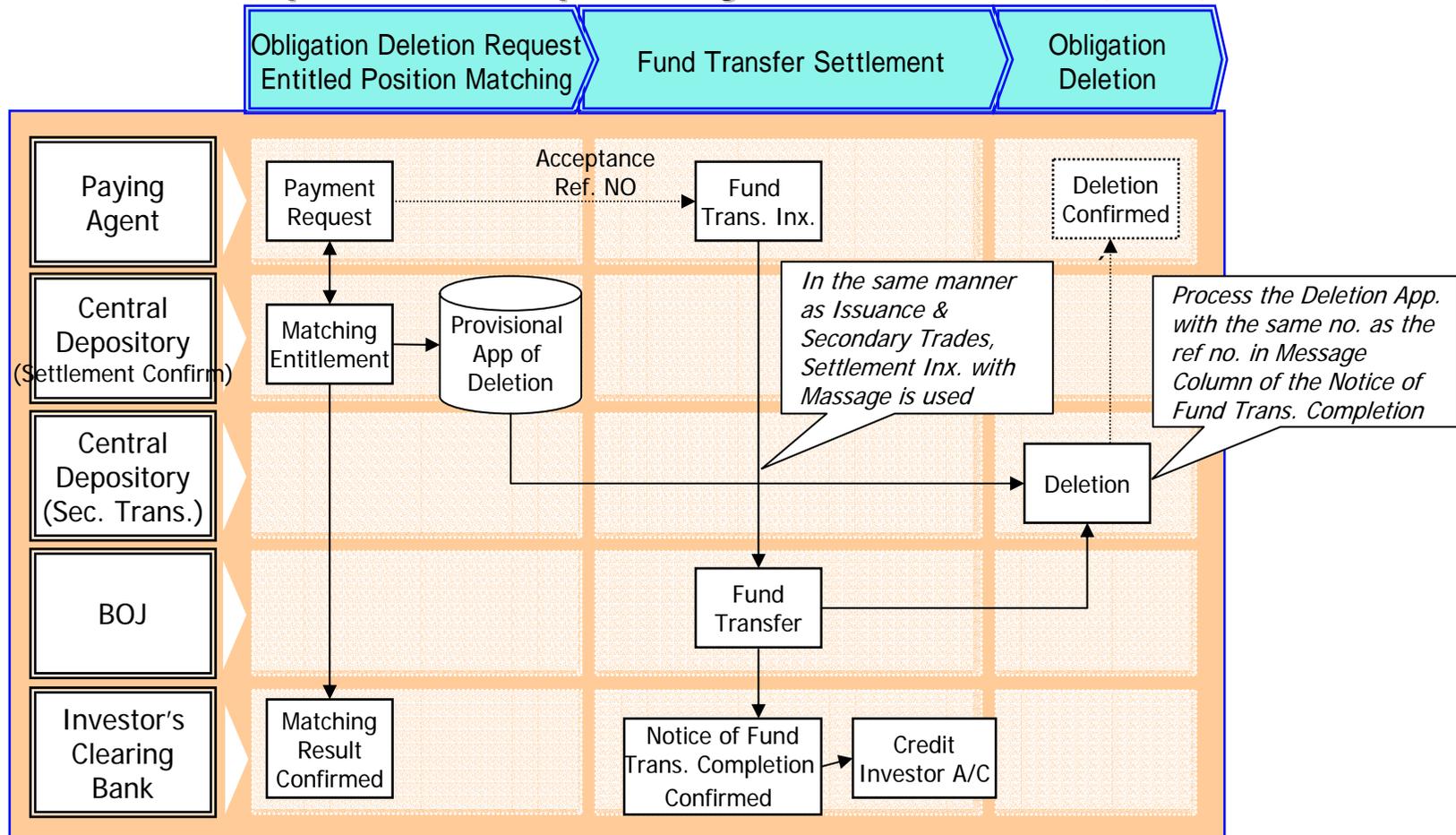
(The numbers in the above correspond to those in the previous page and describe the flow from Request to Deletion)
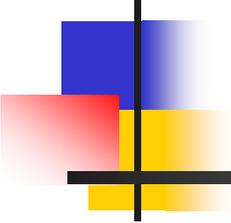
5. Master Plan for Realization

5 - 1. Schedule for Realization

5 - 1 - 1. Milestone for Securities Settlement System Reform (blueprint)

5 - 1 - 2. Master Plan for Introduction of Electronic CP Settlement System (draft)

5 - 1 - 3. Task Plan for the Near Future (draft)

5 - 2. Estimated Costs of Electronic CP, etc.

5 - 2 - 1. Cost Factors of Electronic CP

5 - 2 - 2. Cost Factors of Electronic Bond/Notes

5 - 3. Questions Requiring Continuous Study

# 5 - 1 - 1. Milestone for Securities Settlement System Reform (blueprint)

The electronic CP settlement system improvement is assumed to be realized along with the bigger plan for the securities settlement system reform. This assumes that electronic CP issuance should be available by April 2003 when the partial deposit insurance scheme (so-called pay-off) is introduced for deposits for settlement/clearance purposes.

	2001	2002	2003	2004
Legal Frame	▲ Establish Electronic CP Law / Revise JASDEC Law	♦ △ / ▲ Pay-off starts (deposits for other than settlement)	♦ Establish Bond Transfer Law (expand products) / Revise Commercial Code (paperless equity, etc.) / ▲ Pay-off starts (deposits for settlement)	
Settlement Infrastructure / **Equities**	▲ OSE becomes a joint stock Co. / ▲ TSE becomes a joint stock co. / ▲ TSE DVP begins	▲ JASDEC starts Pre-matching system / ▲ New JASDEC starts - a joint stock co.	△ Equity Centralized Clearing/Netting starts / △ General Book Entry Transfer DVP starts	△ T+1 Settlement
CP / Corporate Bonds		△ Start Electronic CP Settlement	△ Start Electronic CP T+0 Settlement / △ Start Electronic Bond/ Note Settlement	△ T+1 Settlement
Government Bonds (JGB)	▲ BOJ RTGS starts		△ Start JGB Centralized Clearing/Netting	△ T+1 Settlement
Overseas		▲ TFM GSTPA starts (Euro) / ▲ Omgeo starts (USA)	△ Linkage of Japanese Settlement institutions to TFM Omgeo	Postponed → / △ T+1 Settlement (USA)

Street Wide Test

Start Short Term Solution

Start Full Scale Operation

▲ Implemented or Scheduled
△ Not yet scheduled

(JADEC: Japan Securities Depository Center,   So-called JASDEC Law: Equity, etc. Custody & Book Entry Transfer Law,
So-called Pay-off: Partial deposit insurance scheme (up to JPY 10 mill. secured),   TFM Transaction Flow Manager
GSTPA: Global Straight Through Processing Association

5 – 1 – 2. Master Plan for Introduction of Electronic CP Settlement System (draft)

Legend:
- ▲ Implemented or scheduled
- △ Not yet scheduled
- ◆ Milestone for System Rollout

Timeline:
2001/Oct. — 2002/Jan. — Apr. — Jul. — Oct. — 2003/Jan. — Apr. — 2004/Jun.

- Apr. (2002): Electronic CP Law enforced / New JASDEC Operation starts
- Jul. (2002): Bond Transfer Law established
- Oct. (2002): *Electronic CP Settlement System starts*
- 2003/Jan.: Bond Transfer Law Enforced
- Apr. (2003): Pay-off starts (deposits for settlement purposes)
- 2004/Jun.: *Full Scale Operation starts*

Planning
- Concerned Parties Discussion → Continue as Working Team
- Decision Process of Practice Plan

Callout (Phase 1): *As Electronic CP Law is enforced in April 2002, try to implement Phase 1 as early as possible (with less costs)*

Callout (Phase 2): *Follow the Short Term Solution Scheme and expand book entry transfer functions, in order to deal with the following changes due to the enforcement of Bond Transfer Law:*
Multiple Levels of Accounts
Expansion of Eligible Products

Short Term Solution

Phase 1:
- Preparation for Development of Short Term Solution (Each Party)
- CD's System Development
- BOJ's System Change
- Bank/Sec. System Change
- Street Wide Test

Phase 2:
- System Expansion for Elec. Bond
- Street Wide Test

Phase 3:
- Toward T+0 Settlement Of Electronic CP
- Street Wide Test

Callout (Phase 3): *At the same timing as Pay-off starts for settlement purpose deposits, aim to introduce T+0 electronic CP settlement*

Full Scale Operation (Construction of Grand Design)
- CD's Operation Rules, Industrial Standard Rules
- Set up Rules / Standard Contract / Market Practices
- Specifications of Settlement System
- CD's Basic Design
- CD's System Development
- BOJ's Basic Design
- BOJ's System Development
- Rough Spec
- Figuration Decided
- Market Participant's System Outline Designed & Practice Spec
- Market Participant's Sys. Dev.
- Determine Operational Procedures
- Street Wide Test

(Pay-off: Partial deposit insurance scheme, CD: Central Depository)

5 – 1 – 3. Task Plan for the Near Future (draft)

For the time being, the expected tasks within this fiscal year are to be promoted under the following schedule with the purposes of   realization of Short Term Solution in a year,   start of detailed study for Full Scale Operation

2001/
Oct.   Nov.   Dec.   2002/
                                                                      Jan.   Feb.   Mar.

Finalize Grand Design

Concerned Parties Discussion

Central Depository Institution Decided

Decision Process of Practice Plan

Secretariat for Full Scale Electronic CP Settlement System Commencement (tentative name)
More detailed operational scheme & coordination of opinions among the related parties
Consistency check with other securities settlement system reform plans (Equity, JGB, etc)
Decide milestones for realization & resolution of various other questions

Expect: Review and try to reach consensus with JSDA, decide which institution will be the Central Depository, determine strategies for electronic CP DVP settlement, etc.

Preparation for Development of Short Term Solution

Establishment of Central Depository's Operational Rules — Continue studies for full scale operation

Agreement of Industry Standard Rules — Continue studies for full scale operation

Secretariat for Electronic CP Settlement System Short Term Solution Project (tentative name) — Continue coordination of opinions

Specifications of Central Depository's System Development | Developer / Technical Infrastructure Selection & Order / Development Schedule / Organization Decided | CD's System Development

Specifications of DVP Fund Settlement System | Developer / Technical Infrastructure Selection & Order / Development Schedule / Organization Decided | BOJ's System Change

(JSDA: Japan Securities Dealers Association,
CD: Central Depository)

5 – 2 – 1. Cost Factors of Electronic CP

It is an inevitable question of how to reduce costs (fees). It is necessary to keep the costs of services of the Central Depository and related institutions at a lower level: aim for the American/European level.

Current Costs of Promissory Note Form of CP
(General Example)

at Issuance
Note Price: JPY 500   1,000 / note
Stamp Tax: JPY 5,000 / note

at Redemption
Note Collection Fee: JPY 500   1,000 / note

Other Expenses
Remittance Fee: Hundreds of Yen
(at Issuance, Transfer, Redemption)

Overseas CP Book Entry Transfer Fee
(Reference Purpose)

USA: about USD 1 / transfer
France: about USD 3 / transfer

(from Hearing by European Settlement System Study Mission)

System of Electronic CP Expenses (desired)

Transfer Institution Fees (Issuance, Transfer, Redemption)
- Reduce fee levels of new registration, transfer and deletion to as low as possible
- Aim for US/European levels in the future
- If price is more than JPY 1,000 from the commencement, little usage is expected

Remittance Fee (Clearing Bank)
- Need to set a level that is not so expensive compared with the current Zengin Net System Fee

Considering the nature of the product, assume that no withholding tax is imposed on the redemption gains of Electronic CP, like the current Promissory Note Form of CP

(Zengin Net: inter-bank fund settlement system by Zenginkyo (the Federation of Banking Associations)
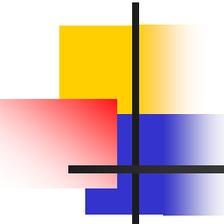
5 – 2 – 2. Cost Factors of Electronic Bond/Notes

By making use of the same infrastructure as Electronic CP, it is possible to drastically reduce the costs of Electronic Bond/Notes in the mid or long term.

Current System of Bond related Costs

Example: JPY 10 Bill. Issuance

Issuance Operational Fee: Millions of Yen

Bond Management Fee: Millions of Yen

 (In the case of Fiscal Agent Bond, Fiscal Agent Fee is charged)

Initial Registration Fee: Millions of Yen

 (only for registered bond)

Coupon Payment Fee: 20 basis points of interest

Redemption Fee: 10 basis points of principal

        (Cap JPY 100K / redemption)

Others: Remittance Fee, etc.

System of Electronic Bond Costs (Desired)

Example: JPY 10 Bill. Issuance

Issuance Operational Fee: depends on contract

Bond Management Fee: depends on contract

Initial Registration Fee*:

                        Hundreds of Yen/Registration

Coupon Payment Fee*:

                        Hundreds of Yen/Payment

Redemption Fee (Principal Amount Transfer fee):

                        Hundreds of Yen/Transfer

Others: Remittance Fee, etc.

   * Those are all paid to the Central Depository.
     As for coupon and redemption, the fees are those for
     payments from Paying Agent to Central Depository's A/C
     Manager Participants (Direct Participants) accounts.)
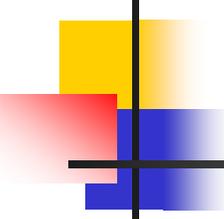
Continuous Questions regarding Short Term Solution

Concrete Method of Sec. Code Assignment at Issuance

Although the Security Code Conference (SCC) currently assigns a sec. code on a one by one basis, the Central Depository is required to assign it automatically. For that purpose the following are needed:) iron out possible problems with SCC coding system, 2) form a concrete automatic coding (and notice) method at Central Depository.

(Regarding Sec. Coding method, refer to "3 – 1 – 3. Security Code Assignment")

Reconfirm Electronic CP related Taxation

As the discount issuance method, the same as for present Note CP, will be followed for Electronic CP, we assume that no withholding tax is imposed in this study. However, no official answer has been given so far. We, as the issuer group, will continue to require no withholding tax treatment.

Also for Electronic Bond/Notes, we have to request the authority not to impose withholding tax at least in the Central Depository (namely, financial institutions, institutional investors, and issuer companies).

Detailed Method of How to Use Fund Transfer Instruction with Message

In the Short Term Solution, we plan to stick to the current system in order to construct the settlement infrastructure as early and inexpensively as possible. It is necessary for the Central Depository to negotiate with BOJ to allow use of the BOJ NET Fund Transfer Instruction with Message for Electronic CP Settlement.

Linkage Service Issuers and Investors can Directly Partake

A sound method to provide the Linkage Service between the Central Depository and participants should be considered on the assumption that issuers and investors can partake in the system easily and at cheaper costs.
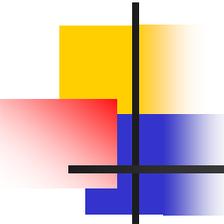
Continuous Questions for Full Scale System Operation

Fund Settlement Flow under Multiple Strata of Accounts Scheme

This also relates to the operations under the Short Term Solution. When the Multiple Levels of A/C System is introduced, some A/C Manager participants may hold both Sec. and Cash A/C's for an investor and some may hold only Sec. A/C. It may require different operational flows. More detailed investigation into fund settlement between the A/C Manager Participant and Investor is required.

Concrete Method of Settlement Matching

Central Depository undertakes Settlement Matching process at Issuance, Secondary Trades, and Coupon/Redemption Payment. It is necessary to determine more concrete items to be reconciled and reconciliation rules in the process, as well as the interface method in creating system specifications.

Fund Transfer Method at BOJ

In the Full Scale Plan, we expect to set up a queuing function for fund settlement instructions. As it influences wider areas, a comprehensive study together with BOJ Current A/C holders under the leadership of BOJ is needed.

In parallel, it is necessary to review security certificate settlement in the RTGS environment together with the current JGB DVP settlement system. (Also industry rules regarding operational time zones should be discussed at an appropriate committee/meeting group.)

Concrete Method to Manage Settlement Exposure

In the Grand Design it has not been fully investigated but it is necessary to comprehensively study the operational flow concerning collateral usage of the securities in transit for settlement while observing the future legislation.

Then, the Central Depository will set forth the Operational Rules and the Clearing Agent institutions will make the standard contract for settlement & custody services. Also, it is necessary to consider Funding/Financing Scheme with Collateral utilizing securities in transit in the future.
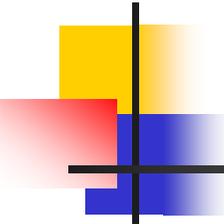
Continuous Questions for Full Scale System Operation (continued)

Measures for Static Stability

Static stability will be legislated together with the Corporate Bond Transfer law. Upon the establishment, the Central Depository needs to form Operational Rules and A/C Manager participants and Clearing Agents are required to produce a standard contract for settlement and custody services quickly.

Method of BOJ's Intra-Day Liquidity Supply

This also relates to the previous item, but when CP issuance on a T+0 basis is available, there may be too much CP issued for the purposes of daily funding. Assuming such a case, it is required that BOJ and the clearing banks investigate the Intra-day Liquidity Supply System Collateralized by Electronic CP in order to secure clearing banks' intra-day liquidity.

Issuance Operations in case of Multiple Underwriters or Subscribers

As this study focused on Electronic CP and its operations, the case of multiple underwriters has not been studied. But such case needs to be investigated (cases other than issuance do not change in principle). This should be examined in detail when the system expansion covering corporate bonds is discussed upon the establishment of new Corporate Bond Transfer Law.

Policy for the Sale of Corporate Bonds to Individual Investor

The merits of uncertificated securities should also be given to individual investors buying corporate bonds. For that purpose further study is necessary. It is not expected that an individual investor would become a participant of the Central Depository. Therefore, the focus of study is on the operational scheme of A/C Manager Participants under the Multiple Levels of A/C environment. After the Central Depository's operational flow is determined, financial institutions becoming A/C Manager participants need to investigate it specifically.
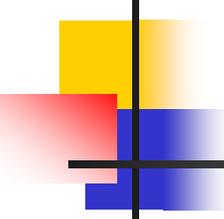
Items to Consider for the Future

Foreign Currency Denominated Electronic CP / Bond

This study has focused on JPY denominated electronic CP / Bonds. However, we need to consider the construction of infrastructure for the issuance and secondary trading of foreign currency denominated electronic CP / Bonds, which will diversify the funding means of Japanese corporations.

This should be discussed after the Full Scale Operation Scheme is completely investigated.

Expansion of Eligible Products

Although it is not clear at the moment what products will be covered by the new Corporate Bond Transfer Law, we require that the scheme which we studied should be applied to MTNs, beneficiary certificates of funds, asset backed securities, etc. and will continue the discussion/investigations including legislation requests.
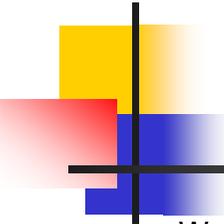
Afterword

We think that, "What the electronic CP / bond settlement systems should be" and "Short Term Solution" are not only our proposals but also the necessary and sufficient measures for the parties involved in the market to realize the settlement system. Needless to say, in order to implement the new settlement infrastructure in line with the "Master Plan of Electronic CP / Bond Settlement System", the parties concerned are required to continue their commitments. We think that it is an important first milestone for success to obtain the agreement of each related party to the following three items as the first step of the project by the end of November, 2001.

1. **Keidanren, representing general corporations, is to agree to the settlement system development under the Master Plan**

2. **JSDA, representing the securities industry, is to study the Grand Design in the settlement system reform committee to reach a consensus as to the basic strategies and to decide a promoter of the Master Plan**

3. **Following the above two, JASDEC, which is currently the only candidate central clearing / depository institution, is to make a decision as to whether to start the new settlement system**

We understand that in order to establish the electronic CP market within a year it is essential to decide early which institution should be the central depository and to quickly start development of the settlement system. We will try to approach as many institutions as possible for the next step to commence as soon as possible (making practical plans and preparation for the short term solution). We expect all related parties to cooperate with us. If you have any questions regarding this report, please contact the following:

Secretariat of CFTA (and JCPA)

Takashi Kato, Business Policy Forum, Japan (Kigyo Katsuryoku Kenkyusho)

TEL 03(3503)7671 FAX 03(3502)3740 E-mail bpf009@galaxy.ocn.ne.jp

CFTA / JCPA