

January 29, 2021  
Japan Securities Depository Center, Inc.

## **Follow-up Report on Malfunction in the Book-Entry Transfer System for Stocks, etc. with respect to JSCC Market DVP Settlement Transfer Processing**

Please note that this document is a translation of a press release published on January 29, 2021 (local time) made for reference purpose only. The official language of the original press release is Japanese. The Japanese version takes precedence over the English version in terms of content and interpretation. For the original Japanese version, please refer to [http://www.jasdec.com/download/news/20210129\\_notice.pdf](http://www.jasdec.com/download/news/20210129_notice.pdf)

On January 20, 2021, we reported delays of the book-entry transfer process due to a malfunction in our Book-Entry Transfer System for Stocks, etc. with respect to “the DVP Settlement for exchange transaction (hereinafter “Market DVP Settlement”)” of the Japan Securities Clearing Corporation (hereinafter “JSCC”).

We have now compiled a follow-up report on the causes of the malfunction and related matters.

We would like to express our sincerest apologies for any inconvenience caused by these delays.

### 1. Incident

With JSCC’s Market DVP Settlement, most stocks are usually transferred from JSCC to the receiving clearing participants by 13:00. However, due to a malfunction in the Book-Entry Transfer System for Stocks, etc. this process was delayed.

As a result, there was an impact on subsequent processing of DVP settlement for NETDs (non-exchange transaction deliveries), etc. for clearing participants that receive transfers from JSCC.

Since this incident was related to the book-entry transfer process for JSCC’s market DVP settlement process, we are working together with JSCC to coordinate information as needed to respond to this issue.

## 2. Business Impact

JASDEC reviewed the situation surrounding the January 20 settlement on the Book-Entry Transfer System for Stocks, etc. and the Pre-Settlement Matching System, and found the following business impacts.

Although the transfer process for JSCC's market DVP settlement (recipients) was delayed, as seen below, all transfer processes to be settled on January 20 were finally completed at 14:15.

Settlement Type	Number of Participants	Number of Delayed Transfers	Settlement Volume (Shares)	Ratio ※ 1
Market DVP Settlement (Recipients)	29	12,839	131,705,288	13.9%

※ 1 Ratio of delayed settlement volume to total settlement volume for market DVP settlement on January 20

Meanwhile, on January 20, in the DVP settlement for stock lending (Cut-off time at 13:30), and in the DVP settlement services for NETDs (Cut-off time at 14:00), settlement failures occurred as seen below.

Settlement Type	Number of Participants	Number of Failed Transfers	Settlement Volume (Shares)	Settlement Amount (JPY)	Ratio ※2
DVP Settlement for Stock Lending	5	603	4,064,400	10,816,005,584	1.6%
DVP Settlement Services for NETDs	10	587	3,625,645	11,292,060,544	0.3%

※ 2 Ratio of failed settlement volume to total settlement volume for DVP settlement for stock lending, DVP Settlement Services for NETDs on January 20.

In addition, for non-resident's transactions on the Pre-Settlement Matching System, approximately 1,200 settlement transfers per day are usually carried over to the next business day, but on January 20, over 7,000 settlement transfers were carried over to the next business day.

### 3. Details

Following are the details of the incident starting from detection onward.

**11:00 (approx.)** JSCC informed us that the book-entry transfer process did not proceed for stocks that should have been transferred to the receiving clearing participants from JSCC on Market DVP settlement.

**12:20 (approx.)** Cut-off time (12:20) for non-resident's transactions on the Pre-Settlement Matching System was extended (notification sent to participants)

- **12:51 Announcement** that cut-off time would be further extended
- **13:10 Announcement** that cut-off time would be extended until 13:10

**13:00** Settlement cut-off time for deliverer reached at JSCC. Due to a malfunction of the Book-Entry Transfer System for Stocks, etc. some transactions related to JSCC's market DVP settlement did not proceed, resulting in a situation where some stocks that should have been transferred to the receiving clearing participants remained in JSCC securities settlement accounts.

**13:15 (approx.)** JSCC sent a special notification of additional payment completion (※ 3) for the relevant receiving clearing participants whose transactions remained to be received at 13:00.

**13:30** Settlement cut-off time reached for DVP settlement for stock lending.

**14:00** Settlement cut-off time reached for DVP settlement services for NETDs.

**14:15** Transfer process completed on net debit calculation (14:15) (※ 4) for JSCC's market DVP settlement.

**15:30** Cut-off time reached for book-entry transfer requests in the Book-Entry transfer system for Stocks, etc.

- **15:17 Announcement** that cut-off time for book-entry transfer requests would not be extended, based on the impact on associated parties.

※ 3 In cases where participants received a notification of additional payment from JSCC, transactions for receiving clearing participants which had remained at a status of uncompleted on net debit calculation immediately following 14:15 were executed.

※ 4 Net debit calculation and associated transfers to recipients are processed at the following points in time.

9:00 (batches from the evening before settlement processed), 9:15, 9:30, 9:45, 10:05, 10:15, 10:30, 10:45, 10:55, 11:05, 11:15, 11:30, 11:40, 11:50, 12:10, 12:20, 12:30, 12:45, 12:55, immediately after 13:00, immediately after 14:15

#### 4. Malfunction Cause

##### (1) Conditions resulting in malfunction

As a result of our investigation, we found out that a malfunction occurred in our Book-Entry Transfer System for Stocks, etc. that blocks transfers of stocks to some receiving clearing participants when all three conditions listed below are met.

- ① There exists a participant for whom no JSCC market DVP settlement transfer occurred during the overnight batch processing that took place on the business day (January 19) prior to the settlement date (January 20).
- ② Information of collateral amount sent to JASDEC from JSCC on the business day prior to the settlement date did not include the above mentioned participant's information.
- ③ On the settlement date, the JSCC market DVP settlement transfer process was executed for the above-mentioned participant, or collateral amount information of the above-mentioned participant was transmitted from JSCC to JASDEC.

##### (2) Malfunction Details and Cause

Under the Book-Entry Transfer System for Stocks, etc., when executing transfers (transfers to recipients) for market DVP settlement, the receiving clearing participants' net debit calculation (hereinafter "Determination of Transfer Capacity") is performed after "collateral amount information" is sorted (in ascending order) by participant code.

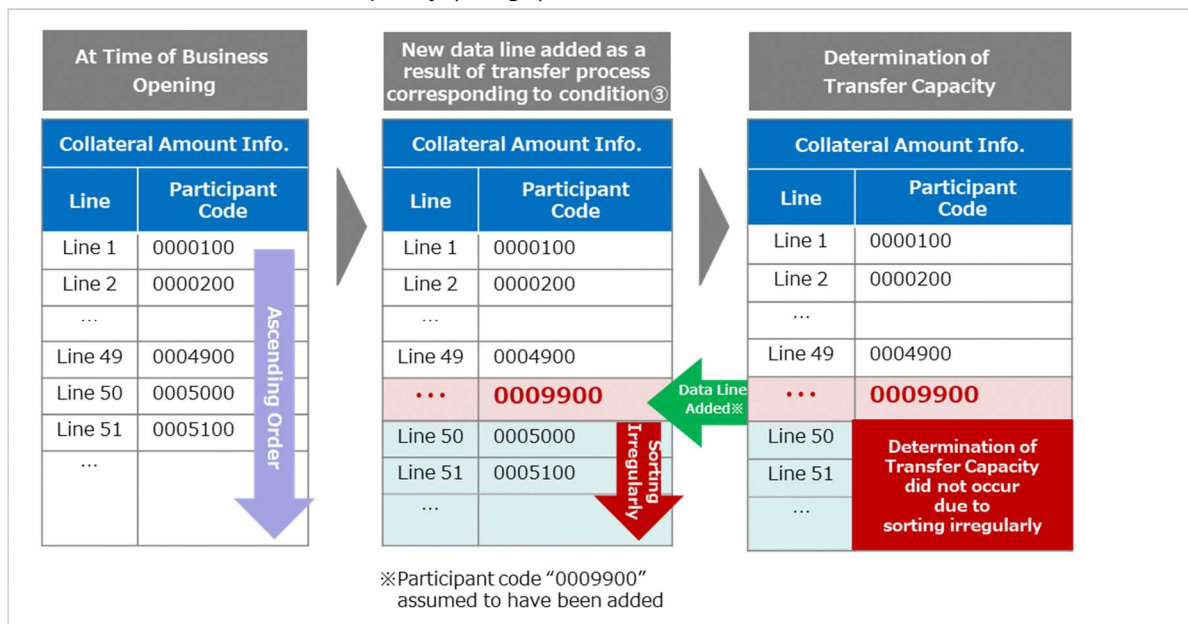
On the day of malfunction, January 20, a situation occurred in which all three of the above mentioned conditions were met, and as a result of the transfer process corresponding to condition ③, a new data line was added to "collateral amount information" (※5). Consequently, irregularities in the sorting of "collateral amount information" occurred (not correctly sorted in ascending order).

※5 Added between lines 49 and 50 of "collateral amount information" according to the specifications and current settings of the database management system.

Under these conditions, during the process of "Determination of Transfer Capacity", due to the fact that "collateral amount information" was not sorted in ascending order as a whole, the receiving clearing participants were not able to be determined correctly by the relevant participant codes (※6) in "collateral amount information" on line 50 and beyond. Consequently, all transfers for the relevant participants were not processed.

※6 Specifically the participant on line 50 code and onward in ascending order.

## Determination of Transfer Capacity (Image)



With the Book-Entry Transfer System for Stocks, etc., when a notification of additional payment was received from JSCC after 13:00, the process of "Determination of Transfer Capacity" was resumed immediately after 14:15, and any incomplete transfers for receiving clearing participants related to the relevant notification were then processed. All transfers were completed with this process on the day of the incident.

### 5. Corrective Action

During the evening of January 20, the malfunctioning sorting program was corrected, and the book-entry transfer process has performed as normal since January 21.

We would like to apologize again for any inconvenience caused by this incident, and ask for your continued support.