

CCASS System Overview

CCASS SYSTEM OVERVIEW

INTRODUCTION:

The Central Clearing and Settlement System (CCASS) is a system to cater for the **book-entry settlement** of transactions in listed securities between CCASS Participants, which includes (i) Direct Clearing Participants, (ii) General Clearing Participants, (iii) Clearing Agency Participants, (iv) Custodian Participants, (v) Stock Lender Participants, (vi) Stock Pledgee Participants and (vii) Investor Participants. Direct Clearing Participants (DCPs) and General Clearing Participants (GCPs) are collectively referred as Clearing Participants (CPs). Most non-investor (non-IP) participants are electronically linked with CCASS and input, enquiry and reporting functions are performed at non-IP participants' CCASS terminals. Investor participants (IPs), on the other hand, can access CCASS via i) CCASS Internet System, ii) CCASS Phone System or iii) by performing transactions via the Customer Service Centre.

The settlement of trades concluded on the Stock Exchange of Hong Kong Limited ("SEHK") forms a major part of the settlement activities in CCASS. Most SEHK listed securities (e.g. ordinary shares, preference shares, registered warrants, rights and debts) are already accepted for settlement in CCASS.

Securities settlement between CCASS participants is effected using electronic book entries. All securities held in CCASS are registered in the name of the nominee company of HKSCC ("**HKSCC Nominees Limited**"), which provides the usual nominee services to participants. Securities held in CCASS are treated as fungible and are not earmarked for particular participants or transactions.

This section is divided into two parts. The first part gives a brief overview of CCASS's clearing and settlement operations. The second part focuses on the role of designated banks in CCASS in regard to payment confirmation. A diagrammatic overview of CCASS is set out in Exhibit 2-A.

EXHIBIT 2-A: OVERVIEW OF CCASS OPERATIONS

[SECT2A](#)

CLEARING AND SETTLEMENT OPERATIONS:

A. Trades on SEHK

An Exchange Participant of SEHK can either clear and settle trades itself as a Direct Clearing Participant, or appoint a General Clearing Participant to clear and settle trades on its behalf.

Details of trades are forwarded by SEHK to HKSCC on a real-time basis. There is no need for Clearing Participants to input such trade details into CCASS.

Substitution:

In case a broker of a trade is not a Direct Clearing Participant, the GCP of the broker will be substituted as the settlement counterparty of the trade for clearing and settlement in CCASS.

In case a Special Participant of a trade, the Clearing Agency Participant of the Special Participant will be substituted as the settlement counterparty of the trade for clearing and settlement in CCASS.

All SEHK trades in eligible securities concluded on SEHK are settled in CCASS under one of two different systems:

- (i) the "**CNS System**": where the original transaction is discharged by novation and replaced by contracts where HKSCC becomes the settlement counterparty and settlement is effected between HKSCC and Clearing Participants; and
- (ii) the "**Isolated Trades System**": where settlement is effected directly between the Clearing Participants.

The settlement period for SEHK trades (except China Connect Securities Trades) in CCASS is **T+2**, that is, the second day following the trade day. China Connect Securities Trades will be settled in CCASS via CNS System only, securities and money settlement for China Connect Securities Trades are on T and T+1 day respectively.

CNS System:

In general, unless the two trading counterparty brokers elect to have a trade settled in CCASS under the Isolated Trades System or unless they are isolated from the CNS System by HKSCC, all trades in eligible securities on SEHK are settled in CCASS under the CNS System.

Under the CNS System, each trade executed on SEHK is replaced by two contracts, one between the delivering Participant and HKSCC as the receiving counterparty, and the other between the receiving Participant and HKSCC as the delivering counterparty.

The obligations arising under these new contracts (called "market contracts") are **netted**, i.e. offset against each other so that a Participant has one net receiving (long) or delivering (short) stock position, with HKSCC as settlement counterparty for trades in a particular security on a trade day.

This netting process operates on a **continuous** basis, in that a net overdue stock position of a Participant on one day is brought forward and netted against any opposite position due for settlement in that stock on the following day.

Trades in eligible securities are novated and guaranteed for settlement under the CNS System on T day, subject to **trade amendments** (trade amendment is not applicable to China Connect Securities Trades), any "late" Exchange Trades and trades not recognized by the Exchange. After the trade amendments made on T+1 day, the final settlement positions, including the amended trades, are created and are guaranteed for settlement under the CNS system.

Isolated Trades (IT) System (Hong Kong Market only):

Two trading counterparty brokers may opt to have a trade settled under the Isolated Trades System instead of the CNS System by election at the time of trade. Trade isolation may also be initiated by HKSCC for risk management purposes.

Settlement in CCASS is then effected directly between the two relevant Clearing Participants on a **trade-for-trade** basis. HKSCC does not become the settlement counterparty.

B. Other transactions

TSF FX Transactions and Stock Release Requests (Hong Kong Market only):

Clearing Participants can clear and settle TSF FX Transactions and perform Stock Release Requests in CCASS only if they are registered as the TSF CCASS Participants. Custodian Participants, upon registration as TSF CCASS Participants, can also hold TSF shares and perform Stock Release Requests in CCASS.

Settlement Instructions:

For transactions other than SEHK trades, each of the two non-IP participants has to input a **Settlement Instruction ("SI")** into CCASS containing the transaction details. SI transactions can include broker-custodian transactions, stock borrowing/lending transactions, stock pledging transactions, and portfolio movements.

Each pair of SIs input into the system is matched by CCASS on a batch basis. After successful matching, a settlement position is created for the transaction and the trade is ready for settlement.

Investor Settlement Instructions (Hong Kong Market only):

For a stock transfer between non-IP participants and IPs within CCASS, a participant (either non-IP participant or IP) has to input an Investor Settlement Instruction ("ISI") into CCASS containing the transaction details. There are two types of ISI:

- (i) "ISI (without affirmation)" : ISI input (and authorised, if required) by participants (either non-IP participant or IP) which meets the following criteria:
 - it is a delivery instruction;
 - it is set as settled on a Free of Payment (FOP) basis; and
 - the receiving counterparty Participant ID is contained in the inputting participant's ISI (without affirmation) counterparty list; and
- (ii) "ISI (with affirmation)" : ISI input (and authorised, if required) by non-IP participants which does not meet the criteria for ISI (without affirmation) and requires affirmation by the relevant IPs before the ISI is accepted by CCASS for settlement.

The IP can input or affirm the ISI via i) CCASS Internet System, ii) CCASS Phone System, or iii) through Customer Service Centre. A settlement position will be created once an ISI is accepted by CCASS.

C. Securities settlement process

Hong Kong Market:

For CNS, IT and SI positions, delivering participants may settle the security leg of a transaction in CCASS by either one of the two methods:

- (i) inputting a **Delivery Instruction ("DI")** through the terminal on or after the due settlement date and is given effect immediately upon input; or
- (ii) relying on CCASS's **multiple batch settlement runs** carried out four times every day (at 10:30 am, 12:00 noon, 2:00 pm and 3:45 pm) when available securities are

automatically taken from the *Stock Clearing Account* or other designated Stock Account of the delivering participant and deposited to the *Stock Clearing Account* or other designated Stock Account of the receiving participant for transactions to be settled that day.

Settlement positions arising from affirmation of ISI will be on-line settled unless sufficient shares are unavailable in the stock account of the delivering party, the positions are not due, RDP payment instruction is selected or the non-IP participants specified that the positions are to be settled via DI. Unsettled positions can then be settled by either (i) or (ii) above.

China Connect Markets:

CNS positions in China Connect Securities and SI positions can be settled by multiple batch settlement runs of Shanghai and Shenzhen markets carried out on any business day when China Connect Markets trading is available in Hong Kong at 4:45 p.m., 5:30 p.m., 6:15 p.m. and 7:00 p.m. The final batch settlement run at 7:45 p.m. will settle SI position of China Connect Securities only. Participants can use DI to settle China Connect Securities CNS positions from 4:00 p.m. to 7:00 p.m. and China Connect Securities SI positions from 4:00 p.m. up to 7:45 p.m.

D. Money settlement

Each participant has a **Money Ledger** recording money obligations owed to or due from HKSCC for transactions with HKSCC. Examples of money obligations are the cash leg of a securities transaction, fees to be paid, mark to market, margin etc.

Unlike securities settlement, participants do not actually deposit monies with HKSCC. Actual money settlement takes place through the clearing system of the Hong Kong Association of Banks ("HKAB").

Corresponding money positions, if any, are usually generated when stock positions are settled in CCASS or when securities are put on-hold in the Delivering Participant's account. There is always a corresponding money position between a Clearing Participant and HKSCC to be settled in CCASS under the CNS Systems because they are settled under delivery versus payment (DVP). However, it is up to the participants to choose either **DVP** or **FOP** (free of payment) as payment instruction for IT positions. In the case of SI or ISI positions for Hong Kong market and SI positions for China Connect markets, participants can choose either DVP, FOP or RDP (Realtime Delivery versus Payment) as payment instruction. CCASS is not involved in money settlement for any FOP payment instruction.

Direct Debit/Credit Instructions (DDIs/DCIs):

Depends on the types of CCASS payments, CCASS generates DDIs/DCIs after the final batch settlement run or at the end of each business day to settle daily monetary positions due from or to CCASS participants. These money positions mainly arise from the settlement of novated SEHK trades of Hong Kong market (i.e. CNS), marks, concentration collateral and margin on pending or due/overdue positions for Hong Kong market, specific cash collateral, additional cash collateral, Guarantee Fund Contributions, entitlement distribution or conversion and subscription instructions under nominee services, fees and expenses for IPs, Mainland Settlement Deposit (MSTD) and Mainland Security Deposit (MSCD) for CNS positions in China Connect Securities and Marks, Concentration Collateral and Margin (MCM) for the Clearing Agency Participant who is a China Connect Clearing House, etc. Thus, there may be more than one DDI/DCI for each CCASS participant each business day. The DDIs/DCIs are submitted to the Clearing House of Hong Kong

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Association of Banks ("HKAB") for Electronic Clearing ("ECG") processing in the respective interbank bulk settlement runs. Types of CCASS payments to be settled in the respective interbank bulk settlement runs are detailed in Table 2.1.

Until payment is confirmed good and irrevocable, the use of shares allocated to Clearing Participants and Clearing Agency Participants by HKSCC for settling their long CNS positions may not be allowed.

In order for the Hong Kong market's allocated shares to be released in time for Clearing Participants and Clearing Agency Participants to fulfil their forthcoming settlement obligations, all participants' designated banks are required to inform (see payment confirmation later) HKSCC whether the payments for the DDIs are "good" or not by 8:00 p.m.. Subsequently, HKSCC's banker also notifies HKSCC whether the DDI funds are good and irrevocable. This occurs on the same business day of the issue of DDIs by HKSCC. HKSCC terminates the "**on-hold**" status over securities it has allocated to the Clearing Participants and Clearing Agency Participants if funds are confirmed good and irrevocable by HKSCC's banker.

Electronic Payment Instructions (EPIs):

HKSCC facilitates the money settlement between CCASS participants for isolated trades, STIs, SIs and ISIs, which are settled on a "DVP" basis, by issuing EPIs. HKSCC also collects fees and expenses for non-IP participants via EPIs. Unlike DDIs/DCIs, HKSCC will not act as the payment counterparty and therefore will not guarantee the money settlement of these EPI transactions.

Subject to the participation of designated banks of IPs to provide payment confirmation service to CCASS for respective EPI, if both the non-IP participant and IP agree, participant may elect to put shares for DVP ISI on-hold in the IP's stock account upon settlement until the corresponding payment is confirmed good by the designated bank on the following business day. In case the payment is confirmed to be rejected, the on-hold shares will be released back to non-IP participant's account specified in the ISI immediately. With such arrangement, non-IP participants will be able to ensure payments are received before shares are released to IPs.

Similar to DDIs/DCIs, HKSCC submits the EPIs to the Clearing House of HKAB for ECG processing in the respective interbank bulk settlement runs day depending on the types of CCASS payments. Money moves directly from the bank account of one participant to the bank account of the counterparty participant for a delivery made in CCASS on a DVP basis. HKSCC is not directly involved. Participants have to monitor confirmation of good payment themselves.

CHATS Payment Instructions (CPIs):

China Connect Securities CNS Monies

Clearing Participants with China Connect Securities settlement obligation will pay or receive CNS money obligation via RTGS on T+1 day. Clearing Participants can refer to the existing Statement of Money Ledger which is available on the morning of T+1 for their CNS money obligations to be settled on the business day. On T+1 morning, CCASS will generate a CPI for each CNS money positions of Shanghai and Shenzhen markets for each China Connect Clearing Participant. (Paying) Participants need to ensure they have sufficient funds in their bank accounts for China Connect Securities

CNS payment and may remind their designated banks act according to the CPIs and complete the payments by the deadline.

Subscription Monies

For subscription instructions input by Participants on CCASS subscription end date (except for subscription instructions input by non-IPs for preferential offers and covered warrants where there is sufficient time for CCASS to collect and confirm the payment for subscription monies via DDIs), CCASS will generate a Clearing House Automated Transfer System (CHATS) Payment Instruction (CPI) for each of such subscription instruction with subscription monies (of any) pending for collection. Each CPI contains payment information for a particular subscription instruction. Upon receiving confirmation advice from the Clearing House of HKAB, CCASS will effect the subscription instructions.

Cash Prepayments/ TSF Payments (Hong Kong Market)[TSF Payment only for Hong Kong Market]

Clearing Participants can choose to make cash prepayment / TSF payment by (i) arrange payment with their banks to remit fund into HKSCC's bank account, then inform HKSCC of such payment; or (ii) instruct HKSCC to generate CPIs on their behalves for the specified cash prepayment amount. Based on the confirmation advice from the Clearing House of HKAB for a particular cash prepayment / TSF payment instruction, CCASS will effect the cash prepayment / TSF payment instructions and update the money ledger of the paying Participant.

Intra-day Marks, Intra-day Margin and Intra-day Mainland Settlement Deposit

Similarly, instead of arranging payment separately, Clearing Participants shall fulfil their Intra-day Marks, Intra-day Margin and Intra-day Mainland Settlement Deposit obligations via CHATS by authorising HKSCC to generate CPIs on their behalves. HKSCC reserves the right to collect Intra-day Marks, Intra-day Margin and Intra-day Mainland Settlement Deposit in any other manner as determined by HKSCC from time to time.

SI / ISI Transactions

CCASS participants can choose to settle SI or ISI positions for Hong Kong market and SI positions for China Connect markets on a "RDP" basis. For transactions to be settled on an "RDP" basis, securities will not be transferred to the receiving participants' stock accounts until after the receipt of confirmation advice from Clearing House of HKAB that relevant money is credited into the delivering participants' designated bank account via CHATS. This is different to "DVP", where securities settlement is performed during business hours while participants are only required to make funds available in their designated bank accounts for (i) SI in the afternoon of settlement day for the evening interbank bulk settlement run, at the end of settlement day for overnight ECG processing or for China Connect Markets SIs settled in the first to final batch settlement run for the night interbank bulk settlement and (ii) ISI for Hong Kong market at the end of settlement day for overnight ECG processing.

Specific Cash Collateral (SCC)

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Clearing Participants can choose to make SCC payments via CHATS payments by authorising HKSCC to generate CPIs on their behalfs to their designated banks via CCASS if they authorise the SCC instruction before 11:45 a.m. on each business day.

During the first three CCASS batch settlement runs of Hong Kong market and first four batch settlement runs of China Connect markets, or when delivering participants effect DIs for SI or ISI positions to be settled on an "RDP" basis, securities will be put on-hold in delivering participants' stock accounts. At the same time, CCASS will generate a CPI for each of such SI or ISI positions with "shares on-hold" status. A CPI contains payment information for a particular RDP SI or ISI. Upon receiving confirmation advice from the Clearing House of HKAB, CCASS will settle the relevant SI or ISI position, during which securities will be debited from the delivering participant's stock account and credited into the receiving participant's stock account.

Each CPI will be made known to the relevant receiving (paying) participant's designated bank via an "Enquire Payment Instruction" function or an "Electronic CHATS Payment Instruction Report". "Enquire Payment Instruction" function is available from 9:30 a.m. to 8:00 p.m. on each business day. CCASS also produces the "Electronic CHATS Payment Instruction Report" nine times a day (shortly after 9:30 a.m., 10:30 a.m., 11:00 a.m., 12:00 noon, 2:00 p.m., 4:45 p.m., 5:30 p.m., 6:15 p.m. and 7:00 p.m.). Each designated bank can retrieve the reports (which contain CPIs of all participants designating the bank) via CCASS terminal and based on which effect CHATS payment accordingly.

To facilitate money settlement via CPI, HKSCC has established an electronic link between CCASS and CHATS. Whenever a CCASS related CHATS is created, the transaction will be transmitted to CCASS for validation. CHATS payment with incorrect input will be rejected by CCASS and subsequently cancelled in the Clearing House of HKAB with cancellation advice generated to the issuing bank. For CHATS payment accepted by CCASS, the transaction will be settled in the Clearing House of HKAB which will generate a confirmation advice. Upon receiving confirmation advice from the Clearing House of HKAB, CCASS will update the relevant transactions status, if applicable, including subscription instructions, cash prepayment instructions, intra-day marks, intra-day margin, intra-day Mainland Settlement Deposit and SI/ISI transactions.

Intra-day Payment Instructions (IPIs):

Other than generating DCIs to settle monetary positions due to CCASS participants during a business day, CCASS participants (other than Investor Participants) can opt to receive corporate action related payments as specified by HKSCC from time to time (e.g. cash dividend) intra-day with same day cleared fund instead of via the evening interbank bulk settlement run using DCIs for those Participants (including Clearing Participants) who have maintained a nominee payment (evening) standing instructions, or at day end via the overnight bulk clearing process by maintaining an Intra-day Payment Standing Instruction via CCASS Terminal. Similarly, for Clearing Participants who use cash prepayment and wish to receive the refund of any excess cash prepayment intra-day can also opt to receive intra-day payment by maintaining an Intra-day Payment Standing Instruction via CCASS Terminal.

Based on the Intra-day Payment Standing Instruction maintained by a non-IP participant, CCASS will generate one consolidated IPI per currency to HKSCC's Agent Bank to effect intra-day payment. Each IPI will be made known to the relevant receiving participant's designated bank via the "Intra-day Payment Instruction Listing", which is normally available after 3:00 p.m. on each business day.

In summary, HKSCC is only directly involved in the settlement of money obligations between itself and CCASS participants for payments arising out of the CNS System and / or nominees services. In other cases (i.e. isolated trades, SI and ISI transactions of DVP or RDP types), HKSCC's role is merely that of a **facilitator**.

Table 2.1 gives a comparison of DDIs/DCIs, EPIs, CPIs, and IPIs. Exhibit 2-B summarizes the daily schedule of CCASS money settlement for DVP transactions of non-IP participants.

TABLE 2.1: Summary of Money Settlement Methods

DDI/DCI	EPI	CPI	IPI
HKSCC as counterparty	HKSCC as counterparty%/facilitator	HKSCC as counterparty / facilitator	HKSCC as counterparty
Authorization - Direct Debit Authorization (DDA) - Payment Confirmation	Authorization - Designated banks accept debit instructions from HKSCC's banker	Authorization - Designated banks accept payment instruction from HKSCC	Authorization - Designated banks accept credit instruction from HKSCC's banker
Undertaking agreement between designated banks and HKSCC	Undertaking agreement between designated banks and HKSCC for payment confirmation of EPIs arising from DVP on-hold ISI and EPIs arising from IT/SI.	N.A.	N.A.

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DDI/DCI	EPI	CPI	IPI
Settlement on - CNS of Hong Kong market [^] - Marks* - Margin* - Specific cash collateral* - Additional cash collateral* - MSTD* - MSCD* - MCM [^] - Collection of subscription monies* - A shares payment, including handling fee, securities management fee, transfer fee, stamp duty and portfolio fee - Corporate action related cash payments** - Refund of excess cash prepayment* - TSF payment [@] - etc	Settlement on - IT [^] - SI (DVP) [^] &* - ISI (DVP) [#] - STI (DVP) [#] - Collection and refund of EIPO application monies [#] - Stamp Duty [#] - CCASS service fees and expenses for non-IP participants*	Settlement on - SI (RDP) - ISI (RDP) - Collection of subscription monies (on prescribed days), cash prepayment, intra-day marks, intra-day margin and specific cash collateral - TSF payment - CNS of China Connect Markets - intra-day Mainland Settlement Deposit	- Corporate action related cash payments - Refund of excess cash prepayment
Same day funds, subject on-hold by bank, available in the evening of the same business day or the next business day	Same day funds, subject on-hold by bank, available in the evening of the same business day or the next business day	Same day funds, immediate availability	Same day funds, immediate availability
HKSCC requires payment confirmation	HKSCC requires payment confirmation for EPIs from non-IP participants and EPIs arising from ISIs settlement on a DVP basis and on-hold mechanism is adopted. Participants monitor receipts and payment	For CPIs arising from SI/ISI transactions on a RDP basis and on-hold mechanism is adopted. HKSCC requires payment confirmation via CHATS.	N.A.

Note:

- [^] Types of payments to be settled in the evening of the same business day via the evening interbank bulk settlement run.
- [&] Types of payments to be settled at night of the same business day via the night interbank bulk settlement run.
- ^{*} Types of payments to be settled in the next business day via the morning interbank bulk settlement run.
- [#] Types of payments to be settled in the next business day via the afternoon interbank bulk settlement run.
- ^{**} Participants can choose to receive the corporate action related cash payments either in the evening of the same business day via the evening interbank bulk or next business day via the morning interbank bulk settlement run.

- @ TSF payment may be settled via the evening interbank bulk settlement run in the same business day and the morning interbank bulk settlement run in the next business day.
- % Only when collecting CCASS service fees and expenses from non-IP participants

PAYMENT CONFIRMATION: (Also see Exhibit 2-B and 2-C)

This section highlights one major role of designated banks: confirmation of payment. Payment confirmations are generated for all DDIs/DCIs/EPIs for transactions relating to non-IP participants and all DDIs plus those EPIs arising from ISIs settled on a DVP basis with on-hold mechanism adopted for transactions relating to IPs. All CCASS terminal operations for the designated banks are related to this aspect.

Prerequisites:

Each CCASS participant must designate at least one bank account for money settlement of CCASS transactions. The designated banks must satisfy HKSCC's requirements for admission as a designated bank. Participants have to give authorization to their designated banks so that the banks can confirm the payment status directly to HKSCC.

The designated banks of CCASS participants need to install CCASS terminals in their offices to confirm participants' payment status. Details of the technical interface requirements are set out in section 6.1.

Table 2.1a details the interbank bulk settlement run operated by the Clearing House of HKAB, Hong Kong Interbank Clearing Limited (HKICL), and the payment confirmation method should be performed by designated banks. There are 3 interbank bulk settlement runs operated by HKICL in each business day to settle various CCASS payments.

TABLE 2.1a: Summary of HKICL's Interbank Bulk Settlement Runs

HKICL's Interbank Bulk Settlement Run	Execution Time	Payment Confirmation
Morning Interbank Bulk Settlement Run	- 9:30 am to 10:00 am - 10:00 am to 10:30 am (<i>if there are payment rejections</i>)	- Input payment rejection of DDI/DCI/EPI via CCASS terminal from 8:30 am to 9:30 am
Afternoon Interbank Bulk Settlement Run	- 2:15 pm to 2:45 pm	- Delivery of returned items to HKICL; and - Input payment rejection of DDI and debit EPI (for ISI DVP on-hold) via CCASS terminal

HKICL's Interbank Bulk Settlement Run	Execution Time	Payment Confirmation
Evening Interbank Bulk Settlement Run	- 5:50 pm to 6:00 pm - 6:00 pm to 6:15 pm (<i>if there are payment rejections</i>)	- Input payment rejection of DDI/DCI/EPI via CCASS terminal during (1) Primary Payment Rejection Window at around 4:20 pm to 5:45 pm (2) Secondary Payment Rejection Window at around 6:00 pm to 8:00 pm
Night Interbank Bulk Settlement Run	- 9:25 pm to 9:35 pm - 9:35 pm to 9:45 pm (<i>if there are payment rejections</i>)	- Input payment rejection of EPI via CCASS terminal from 8:20 pm to 9:20 pm

Confirmation for non-IP participants

Morning Interbank Bulk Settlement Run (8:30 a.m. - 9:30 a.m. on each business day)

In the morning of the business day immediately following the issue of DDIs/DCIs/EPIs by HKSCC, the *DDI/DCI/EPI Listing for Designated Bank* is available for each designated bank through the CCASS terminal. This report gives a list of all DDIs/DCIs/EPIs for non-IP participants to be executed by the bank for confirming payments of morning interbank bulk settlement run.

Not later than 9:30 a.m. on the business day immediately following the issue of DDIs/DCIs/EPIs, the designated bank is required to confirm payment status of DDIs/DCIs/EPIs directly to HKSCC, i.e. itemisation of unpaid transactions together with bulk confirmation that all remaining items have been paid using the INPUT DDI/DCI/EPI REJECTION function (Section 7.1) and then authorize the rejected DDI/DCI/EPI with the AUTHORISE DDI/DCI/EPI REJECTION function (Section 7.1).

A *DDI/DCI/EPI Rejection Listing* is available to each designated bank shortly after 9:30 a.m., through the terminal, summarizing all the rejected DDIs/DCIs/EPIs it has submitted to HKSCC. HKSCC then transmits such information to the Clearing House of the HKAB, who will exclude such payments relating to the rejected DDIs/DCIs/EPIs from the morning interbank bulk settlement run.

In case the designated bank's terminal breaks down before 9:30 a.m., the designated bank should use the CCASS terminals provided by HKSCC's terminal backup centre (see section 6.3 on terminal backup facility). If the designated bank is unable to do so, it has to inform HKSCC and fax the final confirmation status (or submit a written confirmation by hand to HKSCC immediately) not later than 9:30 a.m.

Primary Payment Rejection Window of Evening Interbank Bulk Settlement Run (at around 4:20 p.m. - 5:45 p.m. on each business day)

After the final batch settlement run in CCASS, HKSCC issues DDIs/DCIs/EPIs and generates the *DDI/DCI/EPI Listing for Designated Bank* for each designated bank through the CCASS terminal shortly after 4:05 p.m.. This report gives a list of all DDIs/DCIs/EPIs for non-IP participants to be executed by the bank for confirming payments of evening interbank bulk settlement run.

Not later than 5:45 p.m. on the same business day after the issue of DDIs/DCIs/EPIs, the designated bank is required to confirm payment status of DDIs/DCIs/EPIs directly to HKSCC, i.e. itemisation of unpaid transactions together with bulk confirmation that all remaining items have been paid using the INPUT DDI/DCI/EPI REJECTION function (Section 7.1) and then authorize the rejected DDI/DCI/EPI with the AUTHORISE DDI/DCI/EPI REJECTION function (Section 7.1).

A *DDI/DCI/EPI Rejection Listing* is available to each designated bank shortly after 5:45 p.m., through the terminal, summarizing all the rejected DDIs/DCIs/EPIs it has submitted to HKSCC. HKSCC then transmits such information to the Clearing House of the HKAB, who will exclude such payments relating to the rejected DDIs/DCIs/EPIs from the evening interbank bulk settlement run.

In case the designated bank's terminal breaks down before 5:45 p.m., the designated bank should use the CCASS terminals provided by HKSCC's terminal backup centre (see section 6.3 on terminal backup facility). If the designated bank is unable to do so, it has to inform HKSCC and fax the final confirmation status (or submit a written confirmation by hand to HKSCC immediately) not later than 5:45 p.m.

Secondary Payment Rejection Window of Evening Interbank Bulk Settlement Run (at around 6:00 p.m. - 8:00 p.m. on each business day)

After the completion of the evening interbank bulks settlement run at around 6:00 p.m., the designated bank has the last chance to confirm the payment status of DDIs to HKSCC based on the information on the *DDI/DCI/EPI Listing for Designated Bank* available to each designated bank through the CCASS terminal shortly after 4:05 p.m..

Not later than 8:00 p.m. on the same business day, the designated bank is required to confirm payment status of DDIs to HKSCC using the INPUT DDI/DCI/EPI REJECTION function (Section 7.1) and then authorize the rejected DDI/DCI/EPI with the AUTHORISE DDI/DCI/EPI REJECTION function (Section 7.1).

A *DDI/DCI/EPI Rejection Listing* is available to each designated bank shortly after 8:00 p.m., through the terminal, summarizing all the rejected DDIs it has submitted to HKSCC. HKSCC will return the collected DDI amounts rejected in the secondary payment rejection window via the morning interbank bulk settlement run on the following business day.

Payment Rejection Window of Night Interbank Bulk Settlement Run (at around 8:20 p.m. - 9:20 p.m. on each business day)

After the final SI batch settlement run in CCASS, HKSCC issues EPIs and generates the *DDI/DCI/EPI Listing for Designated Bank* for each designated bank through the CCASS terminal shortly after 8:05 p.m.. This report gives a list of all EPIs for non-IP participants to be executed by the bank for confirming payments of night interbank bulk settlement run.

Not later than 9:20 p.m. on the same business day after the issue of EPIs, the designated bank is required to confirm payment status of EPIs directly to HKSCC, i.e. itemisation of unpaid transactions together with bulk confirmation that all remaining items have been paid using the INPUT DDI/DCI/EPI REJECTION function (Section 7.1) and then authorize the rejected DDI/DCI/EPI with the AUTHORISE DDI/DCI/EPI REJECTION function (Section 7.1).

A *DDI/DCI/EPI Rejection Listing* is available to each designated bank shortly after 9:20 p.m., through the terminal, summarizing all the rejected EPIs it has submitted to HKSCC. HKSCC then transmits such information to the Clearing House of the HKAB, who will exclude such payments relating to the rejected EPIs from the evening interbank bulk settlement run.

Table 2.2 summarizes the CCASS functions and reports related to payment confirmation for non-IP participants.

TABLE 2.2: Functions and reports related to payment confirmation (for non-IP related transactions)

	CCASS Functions	Section in this User Guide
Data entry functions	Input DDI/DCI/EPI Rejection Delete DDI/DCI/EPI Rejection Authorise DDI/DCI/EPI Rejection	Section 7.1
Enquiry function	Enquire DDI/DCI/EPI Rejection Enquire Payment Instruction	Section 7.1 Section 7.12
Reports	DDI/DCI/EPI Listing for Designated Bank DDI/DCI/EPI Exception Report DDI/DCI/EPI Rejection Listing Electronic CHATS Payment Instruction Report	Section 4

REPORT PRINTING:

The reports provided by CCASS and their availability schedule are contained in Sections 4.2 and 4.3. The REQUEST DOWNLOAD function (Section 4.1) is used to print the reports or to download data files of reports.

Confirmation for IP Related Transactions (12:00 noon - 2:30 p.m. on each business day)

In the morning of the business day immediately following the issue of DDIs/EPIs by HKSCC, the *DDI/DCI/EPI Listing for IP Related Transactions* is available for each designated bank of IPs through the CCASS terminal. This report gives a list of all DDIs/DCIs for IPs to be executed by the bank. For EPIs, only those arising from ISIs settlement on a DVP basis with on-hold mechanism will be included.

Not later than 2:30 p.m. on the business day immediately following the issue of DDIs/EPIs, the designated bank is required to confirm payment status of DDIs and relevant EPIs directly to HKSCC, i.e. itemisation of unpaid transactions together with bulk confirmation that all remaining items have been paid using the INPUT REJECTED IP DDI/EPI function (Section 7.2) and then authorize rejected DDI/EPI for each selected currency with the AUTHORIZE REJ IP DDI/EPI LIST function (Section 7.2).

An *Investor Confirmation Report* is available to each designated bank at around 3:00 p.m., through the terminal, summarizing all the rejected IP DDIs and EPIs it has input.

In case the designated bank's terminal breaks down before 2:30 p.m., the designated bank should use the CCASS terminals provided by HKSCC's terminal backup centre (see section 6.3 on terminal backup facility). If the designated bank is unable to do so, it has to inform HKSCC and fax the final confirmation status (or submit a written confirmation by hand to HKSCC immediately) not later than 2:30 p.m.

Table 2.3 summarizes the CCASS functions and reports related to payment confirmation for IPs.

TABLE 2.3: Functions and reports related to payment confirmation

	CCASS Functions	Section in this User Guide
Data entry functions	Input Rejected IP DDI/EPI Delete Rejected IP DDI/EPI Authorize Rejected IP DDI/EPI List	Section 7.2 Section 7.2 Section 7.2
Enquiry function	Enquire Payment Instruction	Section 7.12
Reports	DDI/DCI/EPI Listing for IP-related Transactions Investor Confirmation Report Electronic CHATS Payment Instruction Report	Section 4

REPORT PRINTING:

The reports provided by CCASS and their availability schedule are contained in Sections 4.2 and 4.3. The REQUEST DOWNLOAD function (Section 4.1) is used to print the reports or to download data files of reports.

EXHIBIT 2-B: DAILY SCHEDULE OF MONEY SETTLEMENT for DVP transactions of non-IP participants

Day/time	DDIs/DCIs/EPIs
<p><u>S day</u> Shortly after 3:45 p.m.</p>	<p>CCASS generates DDIs/DCIs/EPIs after CCASS's final batch settlement run for the evening interbank bulk settlement run on the same business day</p>
<p>4:05 p.m.</p>	<p>HKSCC submits DDIs/DCIs/EPIs to be settled in the evening interbank bulk settlement run to Clearing House of HKAB</p> <p>Clearing House of HKAB carries out ECG run to process the instructions</p>
<p>4:20 p.m.</p>	<p>Banks collect FTS files/reports/tapes from Clearing House of HKAB</p> <p>Banks debit/credit participants' A/Cs</p> <p>Banks retrieve details of DDIs/DCIs/EPIs from "DDI/DCI/EPI Listing for Designated Bank" through the terminal</p> <p>Banks retrieve details of exception DDIs/DCIs/EPIs (if any) after validation process of the Clearing House of HKAB from "DDI/DCI/EPI Exception Report" through the terminal</p> <p>Designated banks make credit decisions</p> <p>Designated banks deliver confirmation of payment status to HKSCC</p>
<p>5:45 p.m.</p>	<p>HKSCC transmit the confirmation of payment details to the Clearing House of HKAB</p>
<p>5:50 p.m.</p>	<p>"DDI/DCI/EPI Rejection Listing" available</p> <p>Clearing House of HKAB processes the evening interbank bulk settlement run if there are no CCASS payment amendment items</p>
<p>6:00 p.m.</p>	<p>Clearing House of HKAB processes the evening interbank bulk settlement run if there are CCASS payment amendment items</p>
<p>7:00 p.m.</p>	<p>HKSCC's banker collects CCASS payment amendment items from Clearing House of HKAB relating to the evening interbank bulk settlement run</p> <p>HKSCC's banker informs HKSCC of CCASS payment amendment items relating to the evening interbank bulk settlement run</p>
<p>Shortly after 7:45 p.m.</p>	<p>CCASS generates EPIs after CCASS's final SI batch settlement run for the night interbank bulk settlement run on the same business day</p>
<p>8:05 p.m.</p>	<p>HKSCC submits EPIs to be settled in the night interbank bulk settlement run to Clearing House of HKAB</p> <p>Clearing House of HKAB carries out ECG run to process the instructions</p>

Day/time	DDIs/DCIs/EPIs
8:20 p.m.	<p>Banks collect FTS files/reports/tapes from Clearing House of HKAB</p> <p>Banks debit/credit participants' A/Cs</p> <p>Banks retrieve details of EPIs from "DDI/DCI/EPI Listing for Designated Bank" through the terminal</p> <p>Banks retrieve details of exception DDIs/DCIs/EPIs (if any) after validation process of the Clearing House of HKAB from "DDI/DCI/EPI Exception Report" through the terminal</p> <p>Designated banks make credit decisions</p> <p>Designated banks deliver confirmation of payment status to HKSCC before 9:20 p.m.</p>
8:30 p.m.	CCASS generates DDIs/DCIs/EPIs for the morning interbank bulk settlement run on the next business day
9:00 p.m.	HKSCC submits DDIs/DCIs/EPIs to be settled in the morning interbank bulk settlement run to Clearing House of HKAB
9:20 p.m.	<p>HKSCC transmit the confirmation of payment details to the Clearing House of HKAB</p> <p>"DDI/DCI/EPI Rejection Listing" available</p>
9:25 p.m.	Clearing House of HKAB processes the night interbank bulk settlement run if there are no CCASS payment amendment items
9:35 p.m.	Clearing House of HKAB processes the night interbank bulk settlement run if there are CCASS payment amendment items
9:30 p.m.	Clearing House of HKAB carries out ECG run to process the instructions
<u>S+1 day</u>	<p>Banks collect FTS files/reports/tapes from Clearing House of HKAB</p> <p>Banks debit/credit participants' A/Cs</p> <p>Banks retrieve details of DDIs/DCIs/EPIs from "DDI/DCI/EPI Listing for Designated Bank" through the terminal</p>
8:30 a.m.	<p>Designated banks make credit decisions</p> <p>Designated banks deliver confirmation of payment status to HKSCC</p>
9:30 a.m.	HKSCC transmit the confirmation of payment details to the Clearing House of HKAB
10:30 a.m.	<p>"DDI/DCI/EPI Rejection Listing" available</p> <p>Clearing House of HKAB processes the morning interbank bulk settlement run if there are no CCASS payment amendment items</p>

Section 2

CCASS System Overview

Day/time	DDIs/DCIs/EPIs
11:00 a.m.	Clearing House of HKAB processes the morning interbank bulk settlement run if there are CCASS payment amendment items
12:00 noon	HKSCC's banker collects CCASS returned items from Clearing House of HKAB HKSCC's banker informs HKSCC of CCASS returned items

Note: HKSCC may issue DDIs/DCIs/EPIs on a non-settlement day, as long as it is a business day. In such a case, designated banks are required to make payment confirmation on the business day immediately following the issue of DDIs/DCIs/EPIs by HKSCC. Prescribed procedures of the Clearing House of HKAB in relation to DDIs/DCIs/EPIs should be followed.

EXHIBIT 2-C: DAILY SCHEDULE OF MONEY SETTLEMENT for DVP transactions relating to IPs

Day/time	DDIs/DCIs	EPIs
<u>S day</u>		
7:00 p.m. onwards	CCASS generates DDIs/DCIs	CCASS generates EPIs
8:00 p.m.	HKSCC submits DDIs/DCIs to Clearing House of HKAB	HKSCC submits EPIs to Clearing House of HKAB
9:00 p.m.	Clearing House of HKAB carries out ECG run to process the instructions	Clearing House of HKAB carries out ECG run to process the instructions
<u>S+1 day</u>		
	Banks collect reports/tapes from Clearing House of HKAB	Banks collect reports/tapes from Clearing House of HKAB
	Banks debit/credit participants' A/Cs	Banks debit/credit participants' A/Cs
8:30 a.m.	Banks retrieve details of DDIs/DCIs/EPIs from DDI/DCI/EPI Listing for IP Related Transactions through the CCASS terminal	Banks retrieve details of those EPIs that require bank confirmation from DDI/DCI/EPI Listing for IP Related Transactions through the CCASS terminal
	Designated banks make credit decisions	Designated banks make credit decisions
1:00 p.m.	Banks identify and advise Clearing House of HKAB of returned items	Banks identify and advise Clearing House of HKAB of returned items
2:30 p.m.	Designated banks deliver confirmation of payment status to HKSCC via CCASS terminal Investor Confirmation Report available	Designated banks deliver confirmation of payment status to HKSCC via CCASS terminal Investor Confirmation Report available
3:00 p.m.	HKSCC's banker collects CCASS returned items from Clearing House of HKAB	Banks collect CCASS returned items from Clearing House of HKAB
3:30 p.m.	Clearing House of HKAB processes interbank settlement of IP transactions	Clearing House of HKAB processes interbank settlement of IP transactions
5:00 p.m.	HKSCC's banker informs HKSCC of CCASS returned items	Banks inform their clients of CCASS returned items

Note: HKSCC may issue IP DDIs/DCIs/EPIs on a non-settlement day, as long as it is a business day. In such a case, designated banks are required to make payment confirmation on the business day immediately following the issue of IP DDIs/EPIs by HKSCC. Prescribed procedures of the Clearing House of HKAB in relation to DDIs/DCIs/EPIs should be followed.