

Principles for Financial Market Infrastructures: Disclosure for USD CHATS

Responding Institution(s):	Jointly prepared by HSBC and HKICL in the capacity of the Settlement Institution and System Operator respectively of USD CHATS
Jurisdiction in which the FMI operates:	Hong Kong
Authority overseeing the FMI:	HKMA empowered under the PSSVFO
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List of abbreviations used in this Disclosure

AML	Anti-money laundering
BAHTNET	Bank of Thailand Automated High-value Transfer Network
BI-RTGS	Bank Indonesia Real Time Gross Settlement
BCP	Business Continuity Plan
CCP	Central Counterparty
CCASS	Central Clearing and Settlement System
CFT	Counter-financing of terrorism
CHATS	Clearing House Automated Transfer System
CMOF	Ministry of Finance of the People's Republic of China
CMU	Central Moneymarkets Unit
CPMI	Committee on Payments and Market Infrastructures
CSSO	Clearing and Settlement Systems Ordinance
DP	Direct Participant
DvP	Delivery versus Payment
EFBNs	Exchange Fund Bills and Notes
EUR	Euro
FMIO	Financial Market Infrastructure Oversight
FMI	Financial Market Infrastructures
HKAB	Hong Kong Association of Banks
HKD	Hong Kong Dollar
HKICL	Hong Kong Interbank Clearing Limited
HKMA	Hong Kong Monetary Authority
HSBC	The Hongkong and Shanghai Banking Corporation Limited
ICSDs	International Central Securities Depositories
ICU	Indirect CHATS User
IDR	Indonesian Rupiah
IILF	Interbank Intraday Liquidity Facility
INEDs	Independent non-executive directors
IOSCO	International Organization of Securities Commissions
IP	Indirect Participant
LBs	Licensed Banks in Hong Kong
MYR	Malaysian Ringgit
OTC	Over-the-counter
Procedures	Operating Procedures
PFMI	Principles for Financial Market Infrastructures
PSSVFO	Payment Systems and Stored Value Facilities Ordinance (formerly known as Clearing and Settlement Systems Ordinance)
PvP	Payment versus Payment
RENTAS	Real-time Gross Settlement and Debt Securities Depository System in Malaysia

RMB	Renminbi
RMC	Risk Management Committee
Rules	USD Clearing House Rules, Rainstorm Procedures, Typhoon Procedures
RTGS	Real Time Gross Settlement
SI	Settlement Institution
SO	System Operator
THB	Thai Baht
TPU	Third Party User
USD	US Dollars

I. Executive summary

1. USD CHATS is the interbank payment system in Hong Kong for settling USD transactions on an RTGS basis. It is built on the same infrastructure and operates in the same manner as HKD CHATS. The USD CHATS has been operating smoothly since its launch on 21 August 2000. The HKMA appointed HSBC as the SI of USD CHATS; and HSBC appointed HKICL as the SO.
2. USD CHATS was designated under the CSSO¹ on enactment of the ordinance in 2004 and granted a certificate of finality to provide settlement finality for transactions settled in the system. On 13 November 2015, the CSSO was amended and retitled as PSSVFO². The designation of USD CHATS and certificate of finality granted under the pre-amended CSSO continue to have effect under the PSSVFO. The USD CHATS is subject to the oversight of the HKMA via the FMIO team under the Banking Conduct Department. The HKMA had issued the Guidelines on the Oversight Framework for Designated Clearing and Settlement Systems (PSSVFO Guideline) and the Application of Principles for Financial Market Infrastructures to Designated Clearing and Settlement Systems (PFMI Guideline) under the PSSVFO, to set out the HKMA's oversight requirement and incorporate the relevant requirements under the PFMI published by CPMI-IOSCO into the HKMA's oversight framework respectively. These Guidelines were gazetted on 20 May 2016.
3. Apart from settling large-value interbank payments, USD CHATS also provides clearing and settlement of participants' customer level payments on a multilateral netting basis, and settlement of PvP and DvP transactions via links with other local RTGS systems and overseas payment systems, the CMU (debt securities settlement system) and CCASS (equities settlement system) in Hong Kong. The system features and the turnover statistics are publicly disclosed.
4. Participation in USD CHATS is voluntary. LBs may join as DPs³, IPs⁴, ICUs⁵ or TPUs⁶ based on their business needs. Participation of institutions other than LBs will be subject to the approval of the SI and the HKMA on a case-by-case basis. The USD CHATS participants are required to comply with the PSSVFO, the Rules and

¹ The CSSO, which came into effect on 4 November 2004, provides a statutory regime for the HKMA to designate and oversee clearing and settlement systems which are material to the monetary or financial stability of Hong Kong or to the functioning of Hong Kong as an international financial centre. It also empowers the HKMA to issue guidelines to explain its role, policies and requirements in relation to the oversight of systems designated under the CSSO. The purpose of the CSSO is to promote the general safety and efficiency of clearing and settlement systems designated under the Ordinance.

² The PSSVFO, which came into effect on 13 November 2015, introduces a regulatory regime for stored value facilities and retail payment systems in addition to the existing oversight framework for clearing and settlement systems under the pre-amended CSSO. The empowerment and statutory regime established for the HKMA to designate and oversee clearing and settlement systems remain unchanged.

³ Each DP maintains a settlement account with the SI to clear and settle CHATS payments and bulk clearing items.

⁴ IP does not maintain any settlement account with the SI. Its CHATS payments and bulk clearing items are settled through a DP.

⁵ ICU does not maintain any settlement account with the SI. Its CHATS payments are settled through a DP.

⁶ TPU does not maintain any settlement account with the SI. Its CHATS payments are processed by its DP(s).

Procedures of USD CHATS, which are well documented and communicated to the participants. The USD CHATS is not a CCP and does not guarantee settlement of payments. In particular, the participants have to ensure that they have adequate liquidity to meet their payment obligations.

5. USD CHATS has a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational and other risks. The risks of operating USD CHATS are identified, measured, monitored, managed and controlled comprehensively and prudently under a sound risk assessment and management framework of HSBC.

6. To facilitate liquidity management by participants, the SI provides liquidity to participants through fully collateralized repurchase arrangements. A number of liquidity management tools have been built into USD CHATS and real-time information is available to facilitate liquidity management by participants. A robust operational risk management framework - supported by appropriate system designs and features, IT policies, procedures and controls - is in place to ensure operational reliability and security. On-site resilience, back up sites, together with a comprehensive disaster recovery plan which is regularly reviewed and rehearsed, help ensure that the critical operations of SI and SO can be resumed in a timely manner under various disruption scenarios.

II. Summary of major changes since the last update of the disclosure

7. This version has been updated with 2019 payment figures; some textual changes to previous version for clarity purpose, and HKICL's latest arrangements relating to cyber resilience since the last update in June 2019.

III. General background on the FMI

General description of the USD CHATS and the markets it serves

8. The HKMA plays an active role in the development of financial infrastructure in Hong Kong, including the payment systems (CHATS) and debt securities settlement system (CMU) designated under the PSSVFO, with a view to maintaining Hong Kong as an international financial centre and developing Hong Kong into a settlement hub in the Asian region.

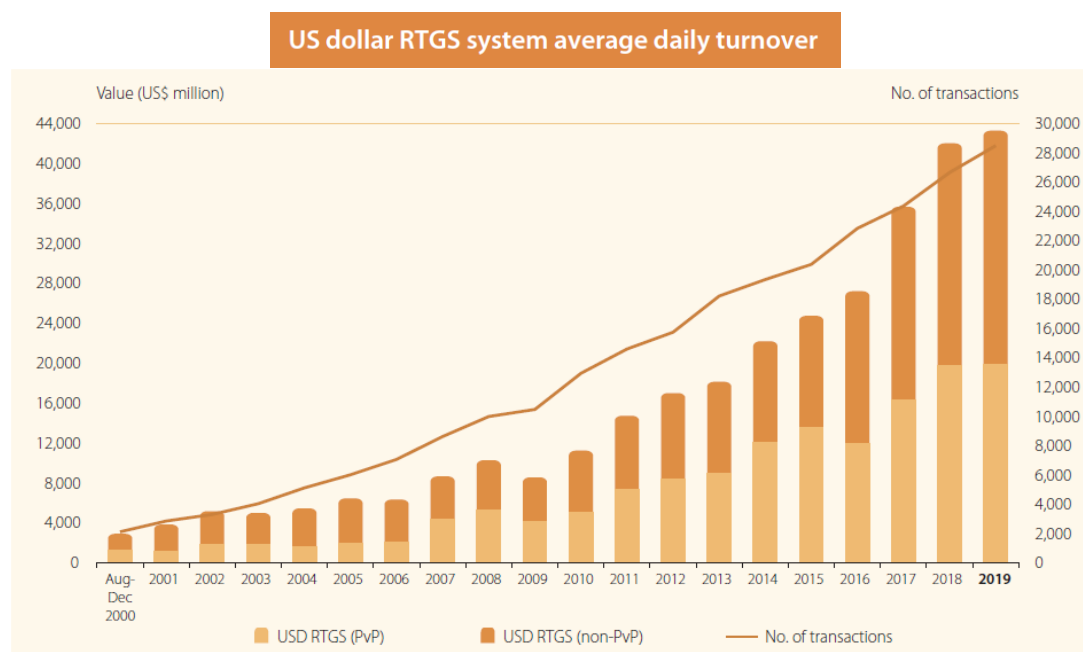
9. USD CHATS provides a safe and efficient settlement platform for USD interbank payments, which are settled in commercial bank money. The HKMA adopted a private sector approach in establishing the USD CHATS. It has appointed a commercial bank, HSBC, as the SI since August 2000. Interbank payments are settled continuously on a gross deal-by-deal basis across the book of the SI as long as there are sufficient funds in the settlement accounts of DPs. Settlements are irrevocable and enjoy immediate finality with the statutory backing of the PSSVFO. To help enhance participants' liquidity management, the SI offers collateralized intraday repo facilities to participants of USD CHATS and has introduced a number of liquidity management tools to USD CHATS.

10. In addition to settling large-value payments between DPs, the system also handles bulk settlement of paper cheques, e-Cheques, stock market and OTC derivatives-related payments, electronic bill payments and credit card payments (collectively known as “bulk items”). These bulk items are settled on a multilateral netting basis.

11. USD CHATS also settles transactions that involve the settlement of two linked obligations simultaneously, thus eliminating principal risks arising from the settlement time lag between the two obligations. It supports PvP for EUR/USD, USD/HKD, and USD/RMB foreign exchange transactions via the links with the EUR, HKD and RMB CHATS in Hong Kong; PvP for USD/MYR, USD/IDR and USD/THB via the links with RENTAS, BI-RTGS and BAHTNET; and DvP for debt and equities transactions via the links with CMU, RENTAS and CCASS respectively.

12. There is no loss-sharing arrangement in USD CHATS. In other words, in case of a failed settlement, the defaulting party will be fully liable for the failed payment. In this connection, each participant has a responsibility to ensure that it has sufficient liquidity to effect its payments in a timely and orderly manner. Default procedures are in place and regularly drilled to minimise the impact of a default on the system and the participants.

13. USD CHATS has been operating safely and smoothly since its launch in August 2000. USD CHATS is subject to a system availability target of 99.9%⁷ for prime time and 99.5% for non-prime time for components within the control of the SO. In 2019, the prime time and non-prime time system availability rates for USD CHATS were both 100%, excluding aspects not within the control of the SO. In 2019, USD CHATS settled on average around 28,475 transactions (excluding bulk items) each operating day, with an average daily value of USD 43.3 billion. It also processed on average around 6,311 bulk items each operating day, involving an average daily value of USD 0.5 billion.



Extracted from the HKMA - 2019 Annual Report

⁷ There are other target measurements for HKICL's monitoring.

General organisation of the USD CHATS

14. USD CHATS has governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders. The SI of the USD CHATS is HSBC, which is a LB regulated by the HKMA. The SI has appointed HKICL as the SO of the USD CHATS. HKICL is jointly owned by the HKMA and HKAB. The HKAB is the association of the banks in Hong Kong which represents the interests of the banking community. The SI and SO have developed policies and procedures for the safe and efficient operation of USD CHATS, which is subject to the oversight of the HKMA via the FMIO team.

15. Since the SI is a business function of HSBC, the management and operations of this function fall under the governance structure of HSBC, and are therefore subject to the normal governance, decision-making, audit and control processes of HSBC. HSBC is tasked with the day-to-day operations of the SI functions, liaison with participants as appropriate and initiating on-going development and enhancements. The USD CHATS participants are thoroughly consulted and briefed with sufficient advance notice on important initiatives and events affecting USD CHATS, which may be driven by the HKMA as the developer and facilitator, the local banking industry, or the latest developments in international practice and regulation.

16. HKICL is responsible for the day-to-day computer and data operations, clearing services and management of USD CHATS on the terms and conditions set out in a Clearing Services Agreement and various addendums (“Services Agreement”) signed between HSBC (as SI) and HKICL. It is also responsible for system development as well as any equipment upgrade and maintenance. HKICL is operated as a separate legal entity, with its own Board of Directors and management team. The Board of Directors of HKICL comprises representatives of the HKMA, representatives of HKAB and two INEDs. The operation of HKICL is managed by the CEO, who is accountable to the Board. HKICL, as the SO, is also accountable to the SI. Further details of the governance structure of HKICL are available at the HKICL website.

Legal and regulatory framework

17. The laws of Hong Kong form the legal basis for the operations of USD CHATS, supplemented by various statutes, regulations and contractual provisions. All the relevant documents are governed by Hong Kong law and are legally binding and enforceable. The general principle for access to the USD CHATS by a participant is stated in the Rules. LBs can join the system as DPs, IPs, ICUs or TPUs. Participation of institutions other than LBs will be subject to the approval of the SI and the HKMA on a case-by-case basis. The SI and the HKMA assess applications of non-LBs based on objective, risk-based, and publicly disclosed criteria.

18. There are other legal documents, namely Account opening form for US dollar settlement account (Account Opening Form) and Master Sale and Repurchase Agreement setting out terms and conditions for the settlement account of DPs with HSBC and repurchase arrangements between HSBC and DPs. HSBC (as SI) has appointed HKICL as the SO under the terms and conditions of the Services Agreement between HSBC and HKICL.

19. The Rules and Procedures set out rights and obligations for participating in the USD CHATS. These documents are made available to each DP when joining the system. The USD CHATS participants are required to adhere to the Rules and Procedures, and comply with the terms and conditions in the Account Opening Form and other documents as specified by HSBC and HKICL. A redacted version of the Rules is available on the website of the HKICL for public access.

20. USD CHATS was designated under the CSSO on 4 November 2004, and granted a certificate of finality on the same day. CSSO was retitled as PSSVFO on 13 November 2015, under which the designation of USD CHATS and certificate of finality continue to have effect under the PSSVFO. The certificate of finality provides statutory backing to the finality status of transactions settled through the system. This finality is protected from insolvency laws and other laws by the PSSVFO. This ensures that transactions settled through USD CHATS are final and irrevocable and will not be reversed in circumstances, including the insolvency of a system participant, whereas any rights resulting from the underlying transaction of any such transaction will be preserved. Both the SI and SO of the USD CHATS are required to comply with the safety and efficiency requirements stipulated in the PSSVFO and other guidelines or requirements specified by the HKMA (as overseer) from time to time.

System design and operations

Operating hours

21. USD CHATS opens for settlement from 08:30 to 18:30 (Hong Kong Time), Mondays through Fridays, except 1 January. Meanwhile, it is available around-the-clock during Monday to Sunday for transaction input (or cancellation), except during pre-scheduled system housekeeping tasks.

Communication mode

22. Since May 2009, USD CHATS has been operating on SWIFT's messaging network (SWIFTNet), which helps enhance interoperability between domestic and international messages for payment instructions and remove operational barriers for overseas institutions to join the system.

Clearing and settlement processes

23. All payments submitted to the system have to go through a validation process. Payment instructions with input errors will be automatically rejected. All validated transactions will be sent to a sanction screening system for scanning. Those transactions that are passed by the sanction screening system before respective cut-off times will be settled immediately if there is sufficient balance in the settlement account of the paying participant. Otherwise, payment instructions will be queued in the system and settled on a first-in-first-out basis until there are sufficient funds in the respective settlement account to settle all the instructions in the queue. If a payment valued on the same day is not settled by the cut-off time of the system, it will be automatically cancelled by the system. DPs can refer to the sanction screening FAQ ("Frequently Asked Questions") on HKICL's website for details on the payment screening process.

24. USD CHATS provides DPs with real-time enquiry functions to monitor the account status and has queue management functions to re-sequence outstanding payments in payment queues.

Clearing and settlement of bulk items

25. In addition to settling large-value interbank payments in RTGS mode, USD CHATS also handles daily bulk clearings for bulk items mentioned above. These items are cleared through HKICL and settled through the bulk settlement runs on a multilateral netting basis. Each type of the bulk items has its own set of operating procedures, which describes comprehensively the clearing and settlement processing flow and requirements and contingency measures.

System features

26. Apart from settling interbank transactions on a RTGS mode as mentioned above, to further reduce the chance of payment gridlocks and to smooth payment flows, the SI has implemented various measures including the provision of collateralized intraday repo facility, and development of liquidity saving device for the USD CHATS. The key tools are summarized as follows:

- a. Intraday repo facility: Subject to SI's discretion, DPs can arrange with the SI to obtain intraday liquidity through interest-free collateralized intraday repo facility. Outstanding intraday repos at the system close will be automatically rolled into overnight repo. Overnight repos that cannot be repurchased as at system open the next day will subject to interest charged by the SI.
- b. Queuing mechanism: If a DP does not have sufficient balance in its settlement account to effect a payment, the transaction is queued in the USD CHATS. DPs can make use of the re-sequencing function to move transactions up or down their list of queued payments. The queuing mechanism allows the DPs to manage their own queues of outstanding payment instructions.
- c. Real time balance enquiry function and pre-notification of bulk settlement flows: DPs are able to view the balance in their settlement accounts on a real time basis. They also have access to the net amounts they need to pay (or receive) for each of the bulk clearing runs that take place during the day so that they can arrange funding in advance for settlement if necessary.
- d. RTGS Liquidity Optimiser (RLO): A built-in liquidity-saving device riding on the multilateral offsetting mechanism to help DPs manage intraday liquidity. RLO will be triggered automatically by USD CHATS at regular intervals during the day or, if needed, by the SI for periodic multilateral offsetting of payment instructions queued in USD CHATS.
- e. Intraday funding and end-of-day funding facilitation: DPs can make use of SWIFT MT202 payment instructions in SI's prescribed format to fund/defund their settlement accounts through their US correspondents/liquidity providers.

- f. IILF: It serves to enhance efficiency of the liquidity provision mechanism between Liquidity Provider(s) (i.e. lending DP(s)) and its registered Liquidity Consumer(s) (i.e. borrowing DP(s)) in USD CHATS on commercial terms.
- g. CHATS throughput guideline: To encourage DPs to make payments at a timely and an orderly manner throughout the day, each DP is required to release and settle not less than 35% of its interbank payments by 13:30, and 70% by 16:30 Hong Kong time based on the value of its total CHATS payments for the day.
- h. Monitoring: To ensure the smooth processing of the payment system, the SI closely monitors the payment condition of each DP on a real-time basis.

IV. Principle-by-principle summary narrative disclosure

Principle 1: Legal basis	<i>An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.</i>
Summary disclosure	<ol style="list-style-type: none"> 1. USD CHATS has a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions 2. For the SI⁸: <ul style="list-style-type: none"> - the laws of Hong Kong provide the legal basis of the operation of the USD CHATS and the contracts underlying the system - the PSSVFO ensures the settlement finality of payments made on the USD CHATS - the HKMA appointed HSBC as the SI since 28 August 2000 and this appointment was renewed on regular basis. The terms and conditions for HSBC to act as the SI are specified in an agreement signed between the HKMA and HSBC - HSBC as the SI appointed HKICL as the SO to perform the day-to-day computer operations and clearing services. The appointment is supported by proper legal documentation and governed by laws in Hong Kong - the Account Opening Form sets out the terms and condition for the settlement accounts of participants with the SI - the Repo Agreement sets out the terms and conditions for SI to provide liquidity to DPs through repo arrangements - the SI grants intraday repo facility to DPs on a bilateral basis based on commercial terms 3. For the SO⁹: <ul style="list-style-type: none"> - appointment of the HKICL as the SO of the USD CHATS is known to the public via the website of the HKMA - appointment of HKICL as the SO to perform the day-to-day computer operations and clearing services is supported by proper legal documentation, including the Services Agreement between HSBC and HKICL - all USD CHATS Participants are required to observe the Rules and Procedures promulgated by HKICL, which set out the terms and conditions of the clearing arrangements for the USD CHATS. The Rules are governed by the Hong Kong law - the Services Agreement, Rules and Procedures cover all material aspects of the operations of HKICL and are all clear, understandable and consistent with relevant laws and regulations

⁸ The SI refers to HSBC in the capacity of the USD Settlement Institution.

⁹ The SO refers to HKICL.

Principle 2: Governance	<i>An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.</i>
Summary Disclosure	<ol style="list-style-type: none"> 1. USD CHATS has governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders 2. For the SI: <ul style="list-style-type: none"> - the daily operation of SI of the USD CHATS is undertaken by a distinct unit within HSBC, with clear and direct lines of responsibility and accountability - the SI function is subject to the oversight of the FMIO team of the HKMA (pursuant to provisions of the PSSVFO) as well as to the internal audit and risk management processes of HSBC - At the bank level, HSBC continues to monitor to ensure fulfilment of its SI role through existing governance of contributing functions, including but not limited to Financial Institutions Group, Payment Services, Global Liquidity and Cash Management, Legal, Credit Risk Management, Sanction Screening Operations, Compliance, Asset Liability and Capital Management, and Balance Sheet Management. - HKICL, as SO of USD CHATS, is accountable to HSBC pursuant to the terms and conditions for its appointment, including but not limited to meeting documented service standards, conducting and passing regular assessments 3. For the SO: <ul style="list-style-type: none"> - HKICL is a private company jointly owned by the HKMA and the HKAB - HKICL has a clear, publicly communicated governance structure. Its Board of Directors, Board Sub-Committee and RMC comprise representatives of the HKMA, representatives of HKAB, and INEDs - HKICL has clear, publicly-communicated mission of providing reliable, quality, efficient, cost-effective and innovative clearing and settlement services in Hong Kong - the SO function is subject to the oversight of the FMIO team (pursuant to provisions of the PSSVFO) - as the SO, HKICL is accountable to HSBC, as the SI of the USD CHATS, under the Services Agreement - HKICL has implemented a mechanism for regular reviews of both the overall Board performance and performance of individual Board members - internal audit function is in place to assess the effectiveness of HKICL's risk management and internal controls system on an ongoing basis - all material changes affecting the operations of the USD CHATS are made available to participants via various means, including the amendment of the relevant documentation and communication to the participants via documents available on the website

Principle 3: Framework for the comprehensive management of risks	<i>FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.</i>
Summary Disclosure	<ol style="list-style-type: none"> 1. USD CHATS has a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks 2. For the SI: <ul style="list-style-type: none"> - the SI function is a business unit of HSBC and hence is subject to the management framework of HSBC. HSBC continues to monitor to ensure fulfilment of its SI role, through existing governance of contributing functions, including but not limited to Financial Institutions Group, Payment Services, Global Liquidity and Cash Management, Legal, Credit Risk Management, Sanction Screening Operations, Compliance, Asset Liability and Capital Management, and Balance Sheet Management - HSBC's recovery plan is submitted to HKMA covering the entities and business functions within, which is subject to review and update by the Bank annually 3. For the SO: <ul style="list-style-type: none"> - the HKICL Board, Board Sub-Committee and RMC oversee the implementation of a sound and comprehensive risk management framework in the HKICL with focus on information technology, operational resilience and business continuity. A risk management framework is in place to identify, measure, monitor, and manage effectively the risks for USD CHATS - there are stringent requirements on information technology and operational risk management. External and/or internal audits are organised to assess critical aspects of the company by carrying out, where applicable, regular information technology audits, operations audits, compliance assessments of the Cheque Imaging and Truncation System (CITS) system and financial audits. Pre-launch system audits are conducted prior to the introduction of major systems to ensure quality and integrity. Contingency drills and rehearsals of disaster recovery arrangements are carried out to ensure business continuity in disaster scenarios - HKICL has implemented a recovery plan based on the international standard on FMI recovery published in October 2014 (revised in July 2017) and updated the same as appropriate - HKICL has obtained certification under two ISO systems and established associated risk management frameworks: the ISO27001 standards for Information Security Management System and ISO9001 for Quality Management System. Under these frameworks, the HKICL adopts organised methodologies to effectively identify, measure, monitor and manage all facets of risks that arise in or are borne by HKICL

Principle 4: Credit Risk	<p><i>An FMI should effectively measure, monitor, and manage its credit exposure to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence.</i></p>
Summary Disclosure	<ol style="list-style-type: none"> 1. The USD CHATS has effective credit risk management processes to measure, monitor and manage its credit exposures to DPs 2. For the SI: <ul style="list-style-type: none"> - USD CHATS is not a CCP, the SI does not guarantee settlement, and thus will not incur credit exposure to payer DPs in terms of payments made to payee DPs not being recoverable from the payer DPs - to facilitate DPs' liquidity management, the SI will grant collateralized intraday repo facility to DPs, and hence will have credit exposure to the DPs. The SI manages its credit risk against the DPs in a way similar to the way a commercial bank manages its counterparty risk. The SI monitors its credit exposure against the DPs through relevant statistical reports and subject to the collateralized intraday repo limits granted - on managing the credit risks DPs exposed to the SI, DPs are not required to maintain any minimum balance in the settlement accounts - on managing the SI's credit exposure to the DPs, the Account Opening Form and the Repo Agreement have specified clearly the arrangement and the terms and conditions for the usage of the collateralized intraday repo facility. The SI may incur credit exposure to DPs due to the provision of liquidity to DPs through collateralized intraday repo facility when the market value of the securities under repo drops below the amount of liquidity provided - the SI accepts only high quality collateral registered with HKMA CMU as eligible securities for intraday repo. Currently, these securities consist of all EFBNs; selected US Treasuries and USD denominated bonds issued in Hong Kong by CMOF, selected Green Bonds issued by the HKSAR Government - the SI applies prudent haircuts (increasing with remaining maturity) on the mark-to-market value of the repo securities to minimize the credit exposure to participants arising from fluctuations in market value of the securities - the granting of collateralized intraday repo facility is discretionary and is subject to review on an ongoing basis taking into considerations various cost and risk factors 3. For the SO: <ul style="list-style-type: none"> - Not applicable. As the SO, HKICL does not incur any credit exposure to participants of USD CHATS

Principle 5: Collateral	<i>An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.</i>
Summary Disclosure	<ol style="list-style-type: none"> 1. The USD CHATS accepts only collateral with high liquidity, no credit risk and low market risk and has set and enforce conservative haircuts 2. For the SI: <ul style="list-style-type: none"> - the SI may incur credit exposure to participants due to the provision of liquidity to DPs through collateralized intraday repo when the market value of the securities under repo drops below the amount of liquidity provided - the SI accepts only high quality collateral registered with the HKMA CMU as eligible securities for intraday repo. Currently, eligible securities for intraday repo consist of all EFBNs issued by the HKMA; selected US Treasuries and USD denominated bonds issued in Hong Kong by CMOF, selected Green Bonds issued by the HKSAR Government - the SI applies prudent haircuts (increasing with remaining maturity) on the mark-to-market value of the repo securities to minimize the credit exposure to participants arising from fluctuations in market value of the securities - the collateral management system used for repo securities, the CMU, is well designed and operationally flexible - through CMU's real-time interface with ICSDs, cross-border collaterals can be brought into the CMU system quickly at any time as required. Real time information enables DPs to use the collaterals efficiently 3. For the SO: <ul style="list-style-type: none"> - Not applicable. As the SO, the HKICL does not incur any credit exposure to participants of USD CHATS, and hence does not impose any collateral requirement on DPs

Principle 6: Margin	<i>A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.</i>
Summary disclosure	Not applicable to USD CHATS as this principle is not applied to a payment system according to the PFMI

Principle 7: Liquidity Risk	<p><i>An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.</i></p>
Summary Disclosure	<ol style="list-style-type: none"> 1. The USD CHATS measures, monitors and manages its liquidity risk effectively. Sufficient liquid resources in the relevant currency (USD) are available to meet its payment obligations under potential stress scenarios 2. For the SI: <ul style="list-style-type: none"> - USD CHATS is not a CCP, the SI does not guarantee settlement, and thus will not incur liquidity risk in terms of obligations to make payments to payee DPs - the SI assists DPs in the management of their liquidity requirements through the liquidity-efficient design of the USD CHATS, the provision of liquidity via collateralized intraday repo facility, the facilitation of intraday funding and end-of-day funding/defunding for settlement accounts, the establishment of IILF to facilitate the DPs to lend and borrow uncollateralized funds on traditional commercial terms basis among themselves, and the provision of real-time information on transactions and settlement account balances of participants - liquidity need of the SI arises in the provision of liquidity to participants through collateralized intraday repo facility. The SI only accepts highly liquid and marketable securities as collateral, which, when pledged, are subject to prudent haircut to address adverse effect on their valuation changes. See Principle 5 for more details - the granting of collateralized intraday repo facility is discretionary and is subject to review on an ongoing basis taking into considerations various cost and risk factors - DPs are expected to follow the CHATS throughput guideline to ensure their payments are cleared and settled at a timely and an orderly manner throughout the day - SI conducts stress test regularly for the purpose of testing the sufficiency of liquidity of USD CHATS, evaluating the adequacy of and adjusting its liquidity risk-management framework, if appropriate 3. For the SO: <ul style="list-style-type: none"> - Not applicable. HKICL is not a participant in the USD CHATS nor would it provide liquidity to participants

Principle 8: Settlement finality	<i>An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.</i>
Summary disclosure	<ol style="list-style-type: none"> 1. The USD CHATS provides clear and certain final settlement in both intraday day and real time modes 2. For the SI: <ul style="list-style-type: none"> - the PSSVFO confers settlement finality to all the payments settled in the USD CHATS, including payments settled real-time or payments settled in batch mode (at scheduled bulk settlement runs) 3. For the SO: <ul style="list-style-type: none"> - as stipulated in the Rules and Procedures, the settlement of a payment is deemed made, completed, irrevocable and final once it is debited from or credited to the settlement account that a participant maintains with the SI

Principle 9: Money settlements	<i>An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.</i>
Summary disclosure	<ol style="list-style-type: none"> 1. The HKMA adopts a private sector solution approach for developing multi-currencies payment systems in Hong Kong. Accordingly, the HKMA has appointed large commercial banks with good credit standing and sound financial position as SIs for foreign currencies payment systems in Hong Kong. HSBC was appointed by the HKMA as the SI for USD CHATS effective from August 2000. All payment instructions effected through USD CHATS are settled across the books of HSBC in the form of commercial money. 2. For the SI: <ul style="list-style-type: none"> - HSBC is a note-issuing bank in Hong Kong under the direct supervision of the HKMA, and has continuously obtained very high credit ratings. The bank managed to withstand the recent world-wide financial crisis on its own without the need for government support, which reaffirms its credit position - though the transactions are not settled in the form of central bank money per se, a number of measures have been put in place to manage and minimize the credit risk and the liquidity risk involved (see Principles 4 and 7). The risks, if any, are known to the DPs who choose to join the system voluntarily 3. For the SO: <ul style="list-style-type: none"> - Not applicable. HKICL is not a participant in the USD CHATS nor would it provide credit facilities/liquidity to participants

Principle 10: Physical deliveries	<i>An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.</i>
Summary disclosure	Not applicable to USD CHATS as this principle is not applied to a payment system according to the PFMI

Principle 11: Central securities depositories	<i>A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.</i>
Summary disclosure	Not applicable to USD CHATS as this principle is not applied to a payment system according to the PFMI

Principle 12: Exchange-of- value settlement systems	<i>If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.</i>
Summary Disclosure	<ol style="list-style-type: none"> 1. USD CHATS has implemented arrangements to eliminate principal risk for the settlement of USD payments with a linked obligation 2. For the SI: <ul style="list-style-type: none"> - PvP arrangements have been implemented for settling USD/HKD, EUR/USD, USD/RMB, USD/MYR, USD/IDR and USD/THB foreign exchange transactions - DvP arrangements have been implemented for settling debt and equity transactions at the CMU and CCASS in Hong Kong and RENTAS in Malaysia 3. For the SO: <ul style="list-style-type: none"> - automatic mechanisms and linkages have been implemented in the relevant CHATS and securities settlement systems to support effective and efficient PvP and DvP settlements, the mechanisms will help match the PvP or DvP related obligations in the respective systems and synchronize the settlement of the obligations in the respective systems to achieve PvP or DvP settlement

Principle 13: Default Management	<i>An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.</i>
Summary Disclosure	<ol style="list-style-type: none"> 1. The USD CHATS has effective and clearly defined rules and procedures to manage a participant default 2. For the SI: <ul style="list-style-type: none"> - USD CHATS is not a CCP, the SI does not guarantee settlement of payments, and thus will not incur any loss or liquidity risk in terms of payments made to payee DPs not being able to be recovered from the payer DPs - loss may arise only in the context of a defaulting participant not being able to repay the liquidity provided by the SI through collateralized intraday repo, and the value of the collateral having dropped below the amount of liquidity provided - a prudent risk management framework has been implemented to guard against the credit risk and collateral risk (see Principles 4 and 5) - the rules and procedures for managing a participant default have been set out in the Rules and Procedures issued by the HKICL, the SO of the USD CHATS 3. For the SO: <ul style="list-style-type: none"> - the Rules and Procedures contain clearly defined rules and operating procedures for handling a participant's default in honouring its payment obligations, including the triggering conditions and procedures for suspension of service to the default participant - the Rules and Procedures on default arrangements are subject to regular reviews and drills

Principle 14: Segregation and portability	<i>A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.</i>
Summary disclosure	Not applicable to USD CHATS as this principle is not applied to a payment system according to the PFMI

<p>Principle 15: General Business Risk</p>	<p><i>An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue providing operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.</i></p>
<p>Summary disclosure</p>	<ol style="list-style-type: none"> 1. The USD CHATS has well-established process to monitor its performance and make provision for the development and operating costs for running the system 2. For the SI: <ul style="list-style-type: none"> - the SI business is a business unit of HSBC under the supervision of the HKMA - within HSBC, there is annual operating expenses planning process that covers projected costs for the SI and SO; any extraordinary expenses beyond original budget would be subject to review and approval. Regular tracking of costs are performed to ensure proper cost management - SI will perform regular review of credit/liquidity support provision to the USD CHATS to control potential business losses, one of which may be coming from credit extended to the direct participants - HSBC's recovery plan is submitted to HKMA covering the entities and business functions within, which is subject to review and update by the Bank annually 3. For the SO: <ul style="list-style-type: none"> - HKICL has a robust management and control system to identify, monitor and manage general business risk - HKICL manages its financial and cash flow position prudently and continuously to operate the company as a going concern. It adheres to commonly adopted corporate governance standards and has a Board of Directors which sets the strategic direction of the company, makes major decisions affecting the business risk profile of the company, and reviews the financial position of the company on a regular basis - HKICL operates on a cost-recovery basis and the HKICL balances its financial position by covering all operating costs from the income it generates. It regularly evaluates the clearing house tariff, which provides income to the HKICL, against projected costs - based on approved development plans, the company always maintains sufficient cash flow to meet daily operational needs and high quality liquid financial resources equivalent to six months' operating expenses funded by equity in the form of retained earnings. Viable plans are also available to meet additional ad hoc or persistent liquidity needs - HKICL has implemented a recovery plan based on the international standard on FMI recovery published in October 2014 (revised in July 2017) and updated the same as appropriate

Principle 16: Custody and investment risks	<i>An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.</i>
Summary Disclosure	<ol style="list-style-type: none"> 1. The USD CHATS has prudent investment and risk management policies and procedures to safeguard its own and its participants' assets 2. For the SI: <ul style="list-style-type: none"> - the SI is investing the positive settlement account balances in short-term or liquid assets that comply with the control framework and limit of HSBC. The investment involves short-term lending, or high-quality assets that can be converted to cash on necessity without any stigma or relationship implication. The investment will be subject to HSBC's internal credit risk, liquidity risk and market risk limit which is monitored under HSBC's Group Risk and Asset Liability and Capital Management team - collaterals posted by participants to the SI under repo for liquidity provision are in custody with the CMU operated by the HKMA. SI will not use the collaterals unless the DP is default or cannot cover its short balance 3. For the SO: <ul style="list-style-type: none"> - as the SO, the HKICL does not hold any assets for the participants of USD CHATS - liquid assets of HKICL are mainly held in deposits with banks in Hong Kong. All banks in Hong Kong are under the prudential supervision of the HKMA

<p>Principle 17: Operational risks</p>	<p><i>An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.</i></p>
<p>Summary Disclosure</p>	<ol style="list-style-type: none"> 1. Plausible sources of operational risk have been identified by the USD CHATS and appropriate systems, policies, procedures and controls have been designed and implement to address such risks 2. For the SI: <ul style="list-style-type: none"> - the operation of all the SI functions are subject to the operational risk management framework of HSBC - BCP is established to ensure timely recovery of the SI functions of HSBC. Provision of settlement services to participants is targeted to recover at full capacity under the BCP. The secondary operational site supporting the BCP is located at a considerable distance to minimize its interdependency with the primary site - within HSBC, testing or assessment on system capacity is carried out before launch of new applications/ systems, or implementation of system enhancements which involve significant changes. The estimated system capacity is matched against the projected business growth on a regular basis to ensure that the systems are capable of meeting business needs - in operating the SI functions, HSBC uses a number of measures including training, cross-team/ cross-division support, flexible working hours, maker-checker arrangements for manual input, to prevent and mitigate human-related operational risks - in order to ensure the overall safety and efficiency of USD CHATS, the SI has put in place a number of physical and logical access controls to protect the relevant resources of the system against unauthorized access/modification disclosure, loss or impairment 3. For the SO: <ul style="list-style-type: none"> - the HKICL Board assigns operational reliability performance targets and imposes stringent operational risk management requirements. It pays particular attention to ensuring operational resilience and effective business continuity arrangements. Also, HKICL has established plans which are being executed to ensure cyber resilience - the operational policies, procedures and controls of HKICL are designed to meet the objectives of maintaining a high level of system availability (over 99.5%) of the USD CHATS system. They are regularly reviewed and tested thoroughly before and after significant changes are launched. The systems are designed to be scalable to accommodate stress volumes under prevailing performance levels and are tested before going live. The computer systems and controls, and operational policies and procedures are subject to regular information technology audits, operations audits and certification audits (ISO standards) carried out by internal/external auditors and certification authorities

	<ul style="list-style-type: none">- HKICL has established plan which is being executed to observe the Guidance on Cyber Resilience for Financial Market Infrastructures issued by CPMI-IOSCO and the Cybersecurity Fortification Initiative issued by HKMA in addressing cyber threats- HKICL has conducted attestation against Customer Security Controls Framework issued by SWIFT- HKICL has defined endpoint security and anti-fraud requirements for participants to reduce the risk of payment frauds in the wholesale payment ecosystem. Participants are required to make self-declaration annually and/or as needed basis in compliance of endpoint security and anti-fraud requirements- Security and anti-fraud bulletin and guidelines on handling of fraudulent payments are issued to promote awareness, support ongoing education and information sharing to participants- HKICL employs comprehensive BCP arrangements to cater for events posing a significant risk of disrupting operations, including events that could cause a wide scale or major disruption- the BCP provides arrangements for the SO to respond to unplanned service disruption to USD CHATS and aims at facilitating timely resumption of USD CHATS in the event of a disruption- the BCP is reviewed regularly and updated when necessary. Procedures are in place to ensure that it reflects the latest system changes
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Principle 18: Access and participation requirements	<i>An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.</i>
Summary disclosure	<ol style="list-style-type: none"> 1. USD CHATS has objective, risk-based and publicly disclosed criteria for participants, which permit fair and open access 2. For the SI: <ul style="list-style-type: none"> - Application for direct participant membership <ul style="list-style-type: none"> • the Rules provide that LBs could join the USD CHATS as DPs, unless otherwise provided by the HKMA or any applicable law • to apply as a DP, LB should submit completed Clearing Service Enrolment Form for Direct Participant of USD Clearing; and Account Opening Form to the SI. Fresh forms will be provided by SI upon request • SI will use the following guidance criteria to assess the application: <ul style="list-style-type: none"> ○ the applicant should be a LB, and such license should not be subject to any suspension or revocation; and ○ the applicant is subject to the customer due diligence requirements imposed by the SI, and the applicable legal and regulatory requirements on AML and CFT - Application for indirect participant membership <ul style="list-style-type: none"> • LBs may by agreement with a DP become IPs; ICUs or TPUs through such DP, unless otherwise provided by the HKMA or any applicable law • Financial institutions other than LBs (e.g. restricted license banks in Hong Kong, overseas banks) may by agreement with a DP become ICUs or TPUs through such DP, subject to the approval of the SI and the HKMA on a case-by-case basis • Prospective DPs of IP/ICU/TPU applicants should submit the following documents to SI: <ul style="list-style-type: none"> ○ completed Enrolment Form for IP/ICU/TPU of USD Clearing (fresh form will be provided by HKICL upon request), and ○ authenticated confirmation that the applicants have fulfilled the due diligence requirements imposed by the DPs in accordance with the HKMA's standard, and the applicable legal and regulatory requirements on AML and CFT - Suspension and exit arrangements are covered in the Rules and Procedures; as well as the terms and conditions of the Account Opening Form which constitute a contract between the SI and respective participants 3. For the SO: <ul style="list-style-type: none"> - established procedures are in place in the Rules and Procedures for handling accession of new participants, suspensions and exits of participants and communicating such changes

Principle 19: Tiered participation arrangements	<i>An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.</i>
Summary disclosure	<ol style="list-style-type: none"> 1. The USD CHATS adopts a two-tier membership structure in which eligible institutions can join as either DPs or indirect participants (namely, IPs, ICUs or TPUs). DPs will open settlement accounts with HSBC as SI directly while indirectly participants will open accounts with their selected DPs 2. For the SI: <ul style="list-style-type: none"> - it is defined in the Rules that LBs may by agreement with a DP to become indirect participants through such DP unless otherwise provided by HKMA or any applicable law. Institutions other than LBs, with the permission of the SI and the HKMA on a case by case basis and by agreement with a DP, may choose to become ICUs or TPUs through such DP - the USD CHATS mainly hosts information on DP's turnover and their credit line usage. Similar information on indirect participants is not currently available from the system or from the SI. To assess the potential risk posed by tiered participation arrangements, the FMIO team of the HKMA will gather information from DPs on their indirect participants' activities on regular basis 3. For the SO: <ul style="list-style-type: none"> - Not applicable. HKICL is not a participant in the USD CHATS

Principle 20: FMI links	<i>An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.</i>
Summary disclosure	Not applicable to USD CHATS as this principle is not applied to a payment system according to the PFMI

Principle 21: Efficiency and effectiveness	<i>An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.</i>
Summary disclosure	<ol style="list-style-type: none"> 1. The USD CHATS is effective and efficient in meeting the requirements of its participants and the markets it serves 2. For the SI: <ul style="list-style-type: none"> - since inception in 2000, USD CHATS has provided a reliable and efficient interbank payment system, and helped to maintain Hong Kong's status as an international financial centre - the effectiveness, efficiency and safety of USD CHATS is further ensured by the effective oversight exercised by the FMIO team of the HKMA pursuant to the PSSVFO - apart from supporting the HKMA's long-term development strategies, the SI also works with the HKMA and SO in identifying new initiatives that may enhance the operating efficiency, effectiveness and safety of the USD CHATS - HSBC as the SI appoints HKICL as the SO to perform clearing services in respect of the USD CHATS. The current terms and conditions of the clearing arrangements are specified in the Services Agreement signed between HSBC and HKICL, as amended from time to time. Performance criteria, such as system availability target of 99.9% for prime time and 99.5% for non-prime time, are included in the Services Agreement 3. For the SO: <ul style="list-style-type: none"> - HKICL has publicly communicated objectives of delivering safe, efficient and effective solutions - clearly defined and measurable targets have been set for monitoring operational performance, which are subject to regular reviews by the Board of the HKICL, the SI and the FMIO team of the HKMA - the effectiveness and efficiency of the system in meeting the requirements of participants and market is ensured by engaging the relevant stakeholders in the design stage as well as the implementation stage of the relevant system features, including through working groups and project-specific committees - HKICL conducts regular customer satisfaction surveys with an aim of obtaining feedback from users and business partners on HKICL's services and identifying areas for improvement. Participants can also make use of this survey to provide comments and suggestions on clearing systems and system features

Principle 22: Communication procedures and standards	<i>An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.</i>
Summary disclosure	<ol style="list-style-type: none"> 1. USD CHATS has adopted internationally-accepted communication procedures and standards to facilitate efficient payment, clearing, settlement and recording 2. SWIFT network (SWIFTNet), an internationally accepted message carrier network, is used to process RTGS payments. The use of SWIFT standards facilitates overseas users to access USD CHATS via SWIFTNet in the same way as local users without the need for any proprietary technology or special arrangements. Hence, operating procedures, processes, and system use by the overseas and local users are the same

Principle 23: Disclosure of rules, key procedures, and market data	<p><i>An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.</i></p>
Summary disclosure	<ol style="list-style-type: none"> 1. USD CHATS has clear and comprehensive rules and procedures to facilitate participants to understand the risks, fees, and other material costs they incur by participation. Key features and procedures of the USD CHATS, as well as the system turnover, have been publicly disclosed 2. For the SI: <ul style="list-style-type: none"> - the role and functions of HSBC as the SI of the USD CHATS have been publicly disclosed in various publications and the website of the HKMA and HSBC - the key features of USD CHATS, including settlement modes, liquidity management tools and settlement finality, have been publicly disclosed in various publications and the websites of the HKMA and HSBC - the detailed operating rules and procedures, and the fee schedule of the USD CHATS are covered in the Rules and Procedures and other communications issued by the SO to participants 3. For the SO: <ul style="list-style-type: none"> - the Rules and Procedures, which are fully accessible by all participants, provide clear and comprehensive information in relation to the risks, fees and other material costs of participating in USD CHATS - key operational information of USD CHATS deemed less technical in nature and easily understandable by the public, such as statistics on clearing volume and value, list of participants and participant codes have been made publicly accessible on HKICL's website - as the SO, HKICL has discussed with the SI and HKAB the appropriate level of public disclosure of the key rules and operating procedures of USD CHATS

Principle 24: Disclosure of market data by trade repositories	<i>A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.</i>
Summary disclosure	Not applicable to USD CHATS as this principle is not applied to a payment system according to the PFMI. USD CHATS is not a TR

V. List of publicly available resources

Public resources		Website
1.	PSSVFO	https://www.elegislation.gov.hk/hk/cap584
2.	PFMI	https://www.bis.org/cpmi/publ/d101a.pdf
3.	Policy statement - Oversight of Financial Market Infrastructures by the HKMA	http://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/oversight/FMI_oversight.pdf
4.	Guideline on the Oversight Framework for Designated Clearing and Settlement Systems (PSSVFO Guideline) issued by the HKMA under PSSVFO	http://www.gld.gov.hk/egazette/pdf/20162020/egn201620202777.pdf
5.	Guideline on the Application of PFMI to Designated Clearing and Settlement Systems (PFMI Guideline) issued by the HKMA under PSSVFO	http://www.gld.gov.hk/egazette/pdf/20162020/egn201620202778.pdf
6.	Explanatory Note on Designation and Issuance of Certificate of Finality of Clearing and Settlement Systems under PSSVFO	http://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/oversight/explanatory_note.pdf
7.	HKMA Annual Report (2019)	https://www.hkma.gov.hk/eng/data-publications-and-research/publications/annual-report/2019/
8.	HKICL	www.hkicl.com.hk
9.	USD CHATS - System Features	http://www.hkma.gov.hk/eng/key-functions/international-financial-centre/infrastructure/payment-systems.shtml https://www.hkicl.com.hk/eng/our_services/clearing_system_in_hong_kong/real_time_gross_settlement_system/usd_clearing_system_in_hong_kong.php
10.	Liquidity and risk management in the RTGS system – the Hong Kong experience	http://www.hkma.gov.hk/media/eng/publication-and-research/quarterly-bulletin/qb200803/fa2_print.pdf
11.	Assessment of USD CHATS against the PFMI (June 2016)	http://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/oversight/US_Dollar_CHATS_2016.pdf
12.	“Payment, clearing and settlement systems in Hong Kong SAR” in Payment, Clearing and Settlement Systems in the CPSS countries - Volume 2	https://www.bis.org/publ/cpss105.pdf
13.	HKMA Quarterly Bulletin	http://www.hkma.gov.hk/eng/publications-and-research/quarterly-bulletin/
14.	HKMA Statistical Bulletin	http://www.hkma.gov.hk/eng/market-data-and-statistics/monthly-statistical-bulletin/

Public resources		Website
15.	List of USD Clearing Participants	https://www.hkicl.com.hk/eng/information_centre/clearing_members_participants_list.php
16.	US Dollar Clearing House Rules, Rainstorm Procedures, Typhoon Procedures (Redacted Version)	https://www.hkicl.com.hk/eng/information_centre/redacted_version_of_clearing_house_rules.php
17.	USD Clearing tariff	https://www.hkicl.com.hk/eng/information_centre/clearing_tariffs.php
18.	List of securities eligible for Intraday Repo	http://www.hsbcnet.com/usd_clearing_si

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