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# Investor Identification Regime at Trading Level for the Securities Market (HKIDR) File Transfer Connectivity Guide

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Version 1.32  
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## I. Document Control

### i. Change History

| Version Number      | Issue Date               | Author               | Abstract  |
|---------------------|--------------------------|----------------------|---|
| 1.0                 | Mar 2022                 | HKEX                 | First Issue   |
| 1.1                 | Jun 2022                 | HKEX                 | Added submission for user having multiple identities<br>Added description for connection through ECP (non-EP) circuit   |
| 1.2                 | Sep 2022                 | HKEX                 | Added required <a href="#">Client ConnectHKEX Access Management Portal</a> (formerly "Client Connect") Business Function for BCAN-CID Mapping File and Reporting Forms submission |
| <a href="#">1.3</a> | <a href="#">Jan 2023</a> | <a href="#">HKEX</a> | <a href="#">Updates made to reflect the renaming of "HKEX Client Connect Portal" to "HKEX Access Management Portal"</a>   |

### ii. Document Cross-Referenced

| Author | Abstract                           |
|--------|------------------------------------|
| HKEX   | HKIDR File Interface Specification |

# 1. Overview

## 1.1. Background

This document serves as a technical reference guide for Hong Kong Investor Identification Regime (HKIDR) interface files exchange through the “Electronic Communication Platform 2.0” (ECP) provided by HKEX.

The document covers the following areas:

- Operation of HKIDR Interface Files Exchange;
- Access to ECP Web Interface and ECP SFTP Interface;
- Self-service provided on registration for ECP SFTP Interface access that includes public key and remote IP address maintenance;
- Connectivity details of Production and End-To-End Testing Environment of ECP for HKIDR interface file submission

Exchange Participants (EPs) and non-EP Relevant Regulated Intermediaries should also refer to the “Investor Identification Regime at Trading Level for the Securities Market (HKIDR) File Interface Specification” for preparation, submission and processing of relevant file submission under the Hong Kong Investor Identification Regime.

There are two channels to access ECP:

- ECP Web Interface via Internet; or
- ECP SFTP Interface via SDNet

## 1.2. Functions of ECP Web Interface

The following functions are available in ECP Web Interface for ECP users:

- File Download
- File Submission
- Activity Enquiry
- Self-Service SFTP Key Management<sup>1</sup>
  - Initial setup of Public Key
  - Renewal of Public Key
  - Registration of Remote IP Addresses
- Acceptance of BCAN-CID Mapping File Client Consent
- Registration for BCAN-CID Mapping File Encryption

## 1.3. Functions of ECP SFTP Interface

ECP SFTP Interface provides SFTP facility for automation of the submission and download processes. The following functions are available:

- File Download
- File Submission

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<sup>1</sup>Self-Service SFTP Key Management is not available when logging on ECP via the SFC WINGS platform. It is only available when logging on ECP using HKEX’s Test Portal account in ECP End-to-End environment, or using HKEX’s [Client Connect](#) [HKEX Access Management Portal](#) (formerly “Client Connect”) account in the ECP production environment.

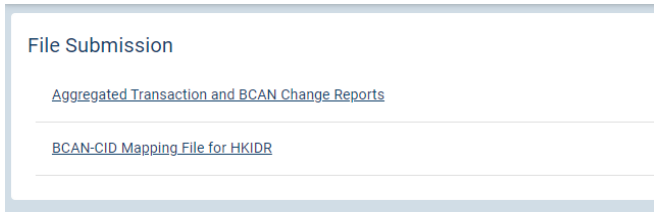
- Renewal of Public Key

## 2. Operation of HKIDR Interface Files Exchange

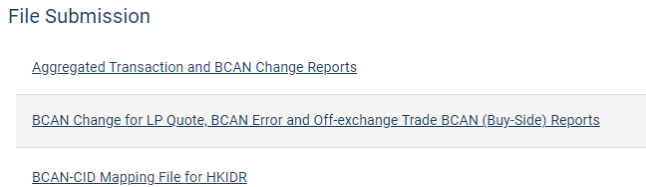
EPs/non-EP Relevant Regulated Intermediaries should observe the service hours, file submission and distribution channel of each HKIDR interface file as documented in the “Investor Identification Regime at Trading Level for the Securities Market (HKIDR) File Interface Specification”.







The following is a typical File Submission menu displays for EP.



Click “BCAN-CID Mapping File for HKIDR” for submissions of

- BCAN-CID Mapping File (File ID: HBCNMAPP)

Click “Aggregated Transaction and BCAN Change Reports” for submissions of

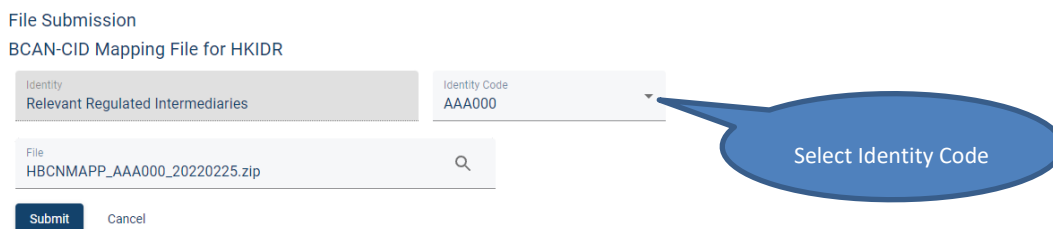
- Aggregated Transaction Report (File ID: HBCNATBN)
- BCAN Change Report (File ID: HBCNBCBN)

Click “BCAN Change for LP Quote, BCAN Error and Off-exchange Trade BCAN (Buy-Side) Reports” for submissions of

- BCAN Change for LP Quote Report (File ID: HBCNLQBN)
- BCAN Error Report (File ID: HBCNERBN)
- Off-exchange Trade BCAN (Buy-side) Report (File ID: HBCNOTBN)

After the submission type is selected, user can choose to submit for the identity the user is authorized. User can select the corresponding identity in the Identity Code field if user is authorized to submit for more than one identity.

The following screen capture takes the submission of a BCAN-CID Mapping File as an example.



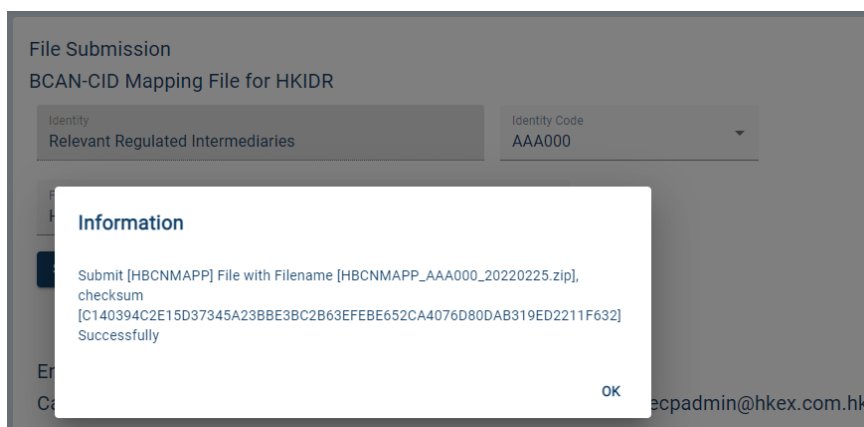
Please refer to Section 3.1 to make a one-off declaration of client consent collection prior to the first-time submission of a BCAN-CID Mapping File.

Validation on file submission:

- The file submission date must be today and must be embedded in the file name
- File name, extension and file submission time must conform to rules defined for the submission type
- Identity Code embedded in the filename must be the same as the inputted Identity Code in the page
- Must not exceed the file size limit. Please refer to Section 5.3 and Section 6.3 for the file size limit
- Must not be a zero byte file
- The compression method when must be “STOR” and “DELFTAT” creating zip file. Advanced compression method e.g. “LZMA” is not supported.

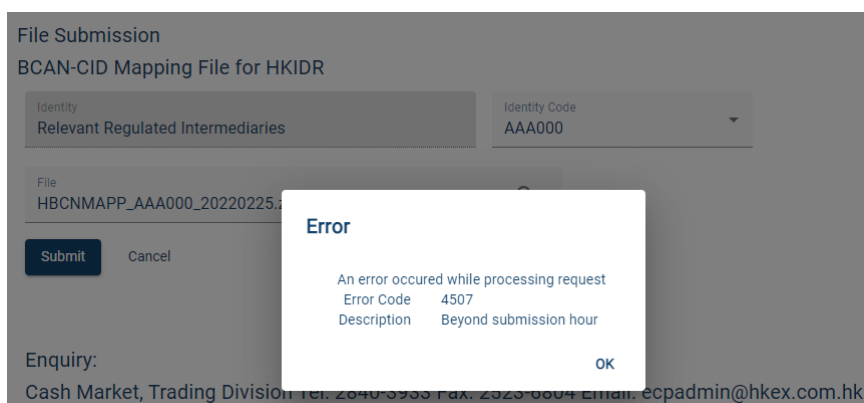
For a submission that is received by HKEX:

- A SHA-256 checksum of the file submitted will be displayed on screen upon submission.



For a submission that is rejected by HKEX:

- Rejection Code and Rejection Reason<sup>2</sup> will be displayed on screen upon submission



<sup>2</sup> The list of rejection code is described in “A.3 Rejection Codes used when submitted file is rejected” of “Investor Identification Regime at Trading Level for the Securities Market (HKIDR) File Interface Specification”.

Submission result could also be enquired from the Activity Enquiry page.

### Activity Enquiry

Activity  
All

Status  
All

From (HK Time)  
2022-02-25 00:00

To (HK Time)  
2022-02-25 23:59

[Search](#)

[Export](#)

| Time             | Endpoint | Activity   | Description  | Status     |
|------------------|----------|------------|--|------------|
| 2022-02-25 11:23 | Web      | Submission | Submit [HBCNMAPP] File with Filename [HBCNMAPP_AAA000_20220225.zip], checksum [C140394C2E15D37345A23BBE3BC2B63EFEBE652CA4076D80DAB319ED2211F632] | Successful |
| 2022-02-25 11:23 | Web      | Login      |  | Successful |

### 3.3. File Download

To download HKIDR interface files distributed by HKEX (e.g. BCAN-CID Response Files, response files for various reporting forms, etc.), go to the Download Corner. Download Corner is the default page upon logging into ECP. By default, the page lists all available files. User can apply filter on the list of files displayed and the date range.

BCAN-CID Response File, BCAN-CID Process Result File and BCAN Full Image File will be available for download on the same date as that for file submission. They will be distributed by HKEX and will be removed at 12:00am the next calendar day.

Response Files and Result Files of various reporting forms will be available for download within 7 calendar days after HKEX distributing the files. Files will be removed after 7 calendar days.

Download Corner

Filter  
All

From (HK Time)  
2022-02-19

To (HK Time)  
2022-02-25

[Search](#)

| Time             | Subject                                     | Last Available Date |
|------------------|---|---------------------|
| 2022-02-25 18:02 | BCAN Full Image File                        | 2022-02-25          |
| 2022-02-25 18:02 | BCAN-CID Process Result File                | 2022-02-25          |
| 2022-02-25 09:53 | BCAN-CID Response File                      | 2022-02-25          |
| 2022-02-24 07:02 | Aggregated Transaction Report Response File | 2022-02-25          |
| 2022-02-24 07:02 | BCAN Change Report Response File            | 2022-02-25          |

Rows per page 10 ▾ 1 - 5 of 5 < >

### 3.4. Activity Enquiry

Activity Enquiry allows the user to query user activities performed in last 30 calendar days on ECP. By default, the page lists all activities. The user can apply filter on activity types, activity status and date range.

### Activity Enquiry

Activity: All Status: All

From (HK Time): 2022-02-25 00:00 To (HK Time): 2022-02-25 23:59

Search Export

| Time             | Endpoint | Activity   | Description  | Status     |
|------------------|----------|------------|--|------------|
| 2022-02-25 11:23 | Web      | Submission | Submit [HBCNMAPP] File with Filename [HBCNMAPP_AAA000_20220225.zip], checksum [C140394C2E15D37345A23BBE3BC2B63EFEBE652CA4076D80DAB319ED2211F632] | Successful |
| 2022-02-25 11:23 | Web      | Login      |  | Successful |

The query result can also be exported in CSV format with file name in the format of: **ECP\_Activity\_<YYYYMMDDHHMMSS>.csv.**

| Time            | Endpoint | Activity   | Description  | Status     |
|-----------------|----------|------------|--|------------|
| 25/2/2022 11:23 | Web      | Submission | Submit [HBCNMAPP] File with Filename [HBCNMAPP_AAA000_20220225.zip], checksum [C140394C2E15D37345A23BBE3BC2B63EFEBE652CA4076D80DAB319ED2211F632] | Successful |
| 25/2/2022 11:23 | Web      | Login      |  | Successful |

## 3.5. SFTP Key Management

SFTP Key Management allows users to register and manage their Public Key and IP Address for accessing ECP SFTP Interface. The current SFTP Key / IP Address settings, if any, will be displayed and the user can choose to perform the following actions:

- Current Public Key Registration
- Renew Public Key Registration
- Set Remote IP Address

### SFTP Key Management

| Public Key | Creation Date | Expiration Date | Fingerprint |
|------------|---------------|-----------------|-------------|
|------------|---------------|-----------------|-------------|

IP Address

### 3.5.1. Current Public Key Registration

This function allows users to register the initial public key. After the successful registration, the “Current Public Key” will be set up for accessing ECP SFTP service. The user can select the public key file to be uploaded. The expiration date will be automatically set as 2 years from the current date.

### SFTP Key Management

#### Current Public Key Registration

Validations on public key file:

- File extension must be “.pub”
- Filename must not exceed 128 characters and only contains alphanumeric character plus five other characters, which are '.' (dot), '-' (dash), '\_' (underscore), ' ' (blank) and '@' (ampersand)
- The file must be in SSH2 Public Key File Format
- Key length must be between 2048 bits and 4096 bits

### 3.5.2. Renew Public Key Registration

This function is available only when there is a current public key set up. A user can upload another public key for renewal. If upload is successful, the uploaded key will be named as “Renewed Public Key”, where:

- “Renewed Public Key” expiration date = 2 years from current date
- “Current Public Key” expiration date = its original expiration date or 2 weeks from current date, whichever is earlier

After “Current Public Key” has expired, the public key will be removed and “Renewed Public Key” will become the new “Current Public Key”.

“Renewed Public Key” cannot be deleted. However, a user can upload a new one to overwrite the existing “Renewed Public Key”, and the expiration date will be renewed.

User can login SFTP facility using either “Current Public Key” or “Renewed Public Key” as long as they are not expired.

### SFTP Key Management

#### Renew Public Key Registration

Validations on public key file:

- File extension must be “.pub”
- Filename must not exceed 128 characters and only contains alphanumeric character plus five other characters, which are '.' (dot), '-' (dash), '\_' (underscore), ' ' (blank) and '@' (ampersand)
- The file must be in SSH2 Public Key File Format
- Key length must be between 2048 bits and 4096 bits
- The key must be different from the existing public keys

### 3.5.3. Set Remote IP Address

The Remote IP Addresses are the IP addresses of SFTP client workstations. User can register up to a maximum of four Remote IP Addresses for SFTP access.

For a successful SFTP connection, the Remote IP Addresses must be within the same subnet (first 3 octets) of Securities and Derivatives Network/2 (SDNet/2) or HKEX Service Network (HSN) where EPs'/non-EP Relevant Regulated Intermediaries' trading system connects to OCG-C/CCCG.

#### SFTP Key Management

##### Set Remote IP Address

IP Address 1

IP Address 2

IP Address 3

IP Address 4

Submit Cancel

Validations on Remote IP Address submission:

- All input IP addresses must be in valid IPv4 Dotted-Decimal format without leading zero, such as 10.163.3.44
- No duplicate IP Addresses found among the inputted IP Addresses
- At least one IP Address must be inputted

### 3.6. BCAN-CID Mapping File Encryption Password Register

By default without additional setup, EPs/non-EP Relevant Regulated Intermediaries can submit the zip file of BCAN-CID Mapping File without encrypting with a password.

Optionally, the zip file of BCAN-CID Mapping file can be encrypted with a password. Prior to the submission of a password-encrypted BCAN-CID Mapping File, EPs/Non-EP Relevant Regulated Intermediaries are required to register the password with HKEX at ECP Web Interface for use during decryption later.

If file encryption is enabled, BCAN-CID Mapping File must be submitted in AES 256-bit password-encrypted zip format using the same password set in here.

## BCAN-CID Mapping File Encryption

If Encryption enable, BCAN-CID Mapping File MUST BE submitted in AES 256-bit encrypted zip using the same password set in here.

|                                       |       |
|---------------------------------------|-------|
| Enable File Encryption                | ▼     |
| Yes                                   |       |
| Password Status                       | ▼     |
| Assigned                              |       |
| Password                              | ..... |
| Confirm Password                      | ..... |
| <input type="submit" value="Submit"/> |       |

### Password Requirement:

- Minimum password length: 10 characters
- Maximum password length: 128 characters
- Password complexity: The password must contain a minimum of 1 uppercase letter, 1 lowercase letter, 1 number, and 1 symbol. All printable characters, except space, are accepted (i.e. ASCII code 0x21 to 0x7E). That includes upper & lower case letters, numbers (0-9), and symbols (@#\$%^&\* etc.).
- Password history: 5 generations

EPs/Non-EP Relevant Regulated Intermediaries are also advised to change the encryption password on a regular basis (e.g. every 3 months).

## 4. ECP SFTP Interface

ECP SFTP Interface is a SFTP facility that is only accessible from the Securities and Derivatives Network/2 (SDNet/2) or HKEX Service Network (HSN) which are used for connection to Orion Central Gateway – Securities Market (OCG-C)/China Connect Central Gateway (CCCG).

Please refer to Section 5.2 for the Production environment ECP SFTP Interface IP address and login information.

Please refer to Section 6.2 for the End-to-End test environment ECP SFTP Interface IP address and login information.

### 4.1. Technical Infrastructure

#### 4.1.1. SFTP Standard

The SFTP facility uses industry standard SFTP and the following protocols are supported:

| #  | Protocol                   | RFC           | Remarks  |
|----|----------------------------|---------------|--|
| 1. | SFTP                       | RFC 4251-4254 | Secure Shell File Transfer Protocol                            |
| 2. | SSH Public Key File Format | RFC4716       | SSH2 Public Key File Format<br>Fingerprint: MD5 message-digest |

EPs/non-EP Relevant Regulated Intermediaries are required to fully ensure that the SFTP client software<sup>3</sup> installed in their SFTP client workstations for file submission adhere to the above standard.

#### 4.1.2. Primary and Backup SFTP Facilities

In the production environment, there are two sets of SFTP facilities setup at HKEX's primary and secondary data centers respectively. Under normal condition, only SFTP facilities in the primary data center is in active mode. If a failure occurs in the primary data center, SFTP facilities in the secondary data center will be switched into active mode.

#### 4.1.3. Recommendation of SDNet bandwidth

EPs/non-EP Relevant Regulated Intermediaries can determine the bandwidth of the SDNet required for SFTP file upload/download by referring to the anticipated data volume.

For a 10 MB file, it will take approx. 1.5 minutes to upload to ECP over a 1 Mb SDNet line.

## 4.2. Secure Shell (SSH) Keys

The SFTP facility adopts Secure Shell (SSH) public-key authentication. EPs/non-EP Relevant Regulated Intermediaries need to generate a pair of SSH private and public keys and register the said public keys through ECP Web Interface for each of the SFTP user accounts.

<sup>3</sup> SFTP client software is any SFTP software run on SFTP industrial standard.



HKEX accepts RSA public keys of key length between 2048 bit and 4096 bits in SSH2 format. Each public key should be saved in a separate file with the file extension as “.pub”.

For example:

```

---- BEGIN SSH2 PUBLIC KEY ----
Comment: SSH KEY
AAAAB3NzaC1kc3MAAACBAPY8ZOHY2yFSJA6XYC9HRwNHxaehvx5wOJ0rzZdzsoSOXxbET
W6ToHv8D1UJ/z+zHo9Fiko5XybZnDiABDhtblQ+Yp7StxyltHnXF1YLfKD1G4T6JYrdH
YI14Om1eg9e4NnCRleaQoZPF3UGfZia6bXrGTQf3gJq2e7Yisk/gF+1VAAAAFQDb8D5c
vwHWTZDPfX0D2s9Rd7NBvQAAAIEA1N92+Bb7D4KLYk3IwRbXblwXdkPggA4pfdtW9vGf
J0/Rhd+NjB4eo1D+0dix6tXwYGN7PKS5R/FXPNwxHPapcj9uL1Jn2AWQ2dsknf+i/FAA
vioUPkmdMc0zuWoSOEsSNhVDtX3WdvVcGcBq9cetZrtOKWOocJmJ80qadxTRHtUAAACB
AN7CY+KKv1gHpRzFwdQm7HK9bb1LAo2KwaoXnadFgeptNBQeSXG1vO+JsvphVMBJc9HS
n24VYtYtsMu74qXviYjziVucWKjjKEb11juqnF0GD1B3VVMxHLMxnAz643WK42Z7dLM5
sY29ouezv4Xz2PuMch5VGPP+CDqzCM41oWgV
---- END SSH2 PUBLIC KEY ----

```

### 4.3. Folder Structure

After connecting to the SFTP facility, there are three boxes in the root level:

| #  | Box            | Remarks  |
|----|----------------|--|
| 1. | download       | For file distribution from HKEX to EPs/non-EP Relevant Regulated Intermediaries<br>It contains sub-folders which the user is entitled to download<br>Within each sub-folder, only the user entitled files are listed and available to download |
| 2. | submission     | For file submission by EPs/non-EP Relevant Regulated Intermediaries to HKEX.<br>It contains sub-folders which the user is entitled to submit.<br>User can upload their submission file into corresponding sub-folder                           |
| 3. | key_management | User can upload their SFTP public key into <b>publickey</b> sub-folder for Public Key Renewal and download Public Key Expiry Warning File  |

Users are not allowed to perform any other file / directory operations other than those described above, including:

- Rename or delete any files
- Create, rename or delete any folders

List of sub-folders described below:

| #  | Sub-Folders        | Remarks  |
|----|--------------------|--|
| 1. | /download/HBCNMAPP | a. Distribution of BCAN-CID Response File (HBCNMPRP).<br>b. Distribution of BCAN Process Result File (HBCNRSLT)<br>c. Distribution of BCAN Full Image File as recorded in HKEX (HBCNFIMG).   |
| 2. | /download/HBCNRFPR | a. Distribution of Aggregated Transaction Report Response File (HBCNATRP).<br>b. Distribution of BCAN Change Report Response File (HBCNBCRP).<br>c. Distribution of BCAN Change for LP Quote Report Response File (HBCNLQRP).<br>d. Distribution of BCAN Error Report Response File (HBCNERRP).<br>e. Distribution of Off-Exchange Trade BCAN (Buy-side) Report Response File (HBCNOTRP).<br>f. Distribution of Aggregated Transaction Report Result File (HBCNATRSLT).<br>g. Distribution of BCAN Change Report Result File (HBCNBCRSLT).<br>h. Distribution of BCAN Change for LP Quote Report Result File (HBCNLQRSLSLT).<br>i. Distribution of BCAN Error Report Result File (HBCNERRSLT). |

| #  | Sub-Folders               | Remarks  |
|----|---------------------------|--|
|    |                           | j. Distribution of Off-Exchange Trade BCAN (Buy-side) Report Result File (HBCNOTRSLT).   |
| 3. | /submission/HBCNMAPP      | a. Submission of BCAN-CID Mapping File (HBCNMAPP).   |
| 4. | /submission/HBCNRFELR     | a. Submission of Aggregated Transaction Report (HBCNATBN).<br>b. Submission of BCAN Change Report (HBCNBCBN).  |
| 5. | /submission/HBCNRFEO      | a. Submission of BCAN Change for LP Quote Report (HBCNLQBN).<br>b. Submission of BCAN Error Report (HBCNERBN).<br>c. Submission of Off-exchange Trade BCAN (Buy-side) Report (HBCNOTBN). |
| 6. | /key_management/publickey | a. Submission of SFTP public key for Public Key Renewal<br>b. Download of Public Key Expiry Warning File   |

For files submission, EPs/non-EP Relevant Regulated Intermediaries need to upload files to the submission box.

User accounts under the same EP/non-EP Relevant Regulated Intermediary will share the same download box. Thus users can retrieve same set of files from the download box for files that are distributed by HKEX.

For submission box and key\_management box, the files cannot be shared with other SFTP user accounts even if they belong to the same EP/non-EP Relevant Regulated Intermediary.

#### 4.4. File Submission

To submit a file, the user uploads the submission file into **/submission/<sub-folder>** using their SFTP Client.

The submitted file is processed in background and not shown in the **/submission/<sub-folder>**. After the processing has completed, an Acknowledgment File (.rcvd) or a Rejection File (.rej) is generated.

Prior to the first time submission of BCAN-CID Mapping File, EPs/non-EP Relevant Regulated Intermediaries is required to access ECP Web Interface to make a one-off declaration of client consent collection. For detail, please refer to Section 3.1 “BCAN-CID Mapping File Client Consent”.

Acceptance criteria of the submitted files:

- File name, extension and file submission time must conform to rules defined for the submission folder
- Identity Code which is CE Number / Firm ID embedded in the filename must be one of the identity codes entitled to the user
- Must not exceed the file size limit. Please refer to Section 5.3 and Section 6.3 for the file size limit
- Must not be a zero byte file
- The compression method must be “STOR” and “DEL FAT” when creating zip file. Advanced compression method e.g. “LZMA” is not supported.

Note:

- If the filename is longer than the system limit, i.e. 128 characters, the file will be rejected in SFTP level and no Rejection File will be generated.

##### 4.4.1. Submission Accepted

For a submission that is accepted, an Acknowledgment File (file extension: .rcvd) containing the submission file checksum will be generated in the submission folder if the file was submitted through SFTP.

Please refer to “A.1 Acknowledgment File” at “Investor Identification Regime at Trading Level for the Securities Market (HKIDR) File Interface Specification” for details.

#### 4.4.2. Submission Rejected

For a submission that is rejected, a Rejection File (file extension: .rej) will be generated in the submission folder if the file was submitted through SFTP.

Please refer to “A.2 Rejection File” at “Investor Identification Regime at Trading Level for the Securities Market (HKIDR) File Interface Specification” for details.

#### 4.5. File Download

User can download files published by HKEX in **/download/<sub-folder>**. Only sub-folders or files that are granted access to the user will be available for download.

#### 4.6. SFTP Key Renewal

EPs/non-EP Relevant Regulated Intermediaries are advised to renew the public keys every two years. The public key should also be renewed immediately if the private keys are compromised.

Renewal of public key can be performed either via ECP Web Interface or SFTP facility.

Public key can be renewed by uploading new public key into SFTP folder **/key\_management/publickey**. After the upload has completed, an Acknowledgment File (file extension: .rcvd) or Rejection File (file extension: .rej) is generated.

Note:

- Public Key Acknowledgment File and Rejection File are retained for a maximum of 24 hours and will be subsequently removed by system clean up
- If filename is longer than the system limit, i.e. 128 characters, the file will be rejected in SFTP level and no Rejection File will be generated
- SFTP public keys submitted through SFTP and Web Interface will be registered in the same way and the expiration date is the same

Please refer to Section 3.5.2 “Renew Public Key Registration” for the details of public key renewal processing.

##### 4.6.1. Public Key upload accepted

For a public key file upload that is accepted, a Public Key Acknowledgment File will be generated in the submission folder if the file was submitted through SFTP.

The filename is formatted as **<original file name>.<timestamp – HHMMSS>.<seq>.rcvd** in **sub-folder /key\_management/publickey** where “.<seq>” is optional and appears only when file of same name are uploaded within same second and is accepted.

For example, if 3 files with same file name are uploaded within same second and accepted, then the Public Key Acknowledgment File will be named as:

1st file: <original file name>.<timestamp – HHMMSS>.rcvd

2nd file: <original file name>.<timestamp – HHMMSS>.1.rcvd

3rd file: <original file name>.<timestamp – HHMMSS>.2.rcvd

This Public Key Acknowledgment File only contains one line, which is the uploaded public key fingerprint (MD5 hash digits of public key) in the format of 16 octets printed as hexadecimal with lowercase letters and separated by colons, for example:

12:f8:7e:78:61:b4:bf:e2:de:24:15:96:4e:d4:72:53

#### 4.6.2. Public Key upload rejected

For a public key file upload that is rejected, a Public Key Rejection File will be generated in the submission folder if the file was submitted through SFTP.

The filename is formatted as **<original file name>.<timestamp – HHMMSS>.<seq>.rej** in sub-folder **/key\_management/publickey** where “.<seq>” is optional and appears only when file of same name are uploaded within same second and is rejected.

For example, if 3 files with same file name are uploaded within same second and rejected, the Public Key Rejection File will be named as:

1st file: <original file name>.<timestamp – HHMMSS>.rej

2nd file: <original file name>.<timestamp – HHMMSS>.1.rej

3rd file: <original file name>.<timestamp – HHMMSS>.2.rej

The Public Key Rejection File is a text file in window text file format (line ends with CR+LF) in the following format:

| #  | Field            | Type         | Size | Remarks                     |
|----|------------------|--------------|------|-----------------------------|
| 1. | Rejection Code   | Numeric      | 5    | Rejection code              |
| 2. | Rejection Reason | Alphanumeric | 255  | Rejection reason in English |

The list of rejection code is the same as that described in “A.3 Rejection Codes used when submitted file is rejected” at “Investor Identification Regime at Trading Level for the Securities Market (HKIDR) File Interface Specification”.

#### 4.6.3. Public Key Expiry Warning

Public Key Expiry Warning File (“SSHKeyExpireWarning.txt”) will be shown in sub-folder **/key\_management/publickey** if the public key is going to expire within 14 days (based on the time user login).

The warning file is a fixed width text file in window text file format (line ends with CR+LF) which includes the current key and renewed key (if available). For example:

| Public Key         | Creation Date | Expiration Date | Fingerprint                                     |
|--------------------|---------------|-----------------|---|
| Current Public Key | 2021-02-01    | 2021-07-15      | 90:4e:0d:c7:00:37:51:8d:56:5a:a2:d1:93:27:51:2c |
| Renewed Public Key | 2021-07-01    | 2023-07-01      | a2:d1:93:27:51:2c:4e:0d:c7:00:37:51:8d:56:5a:51 |

After the current public key has expired and has been removed from the system by housekeeping job, the warning file will not be shown in the folder in the next SFTP login.

## 5. Production Environment Connectivity Details

### 5.1. ECP Web Interface

ECP Web Interface URL: <https://ecp2.hkex.com.hk>

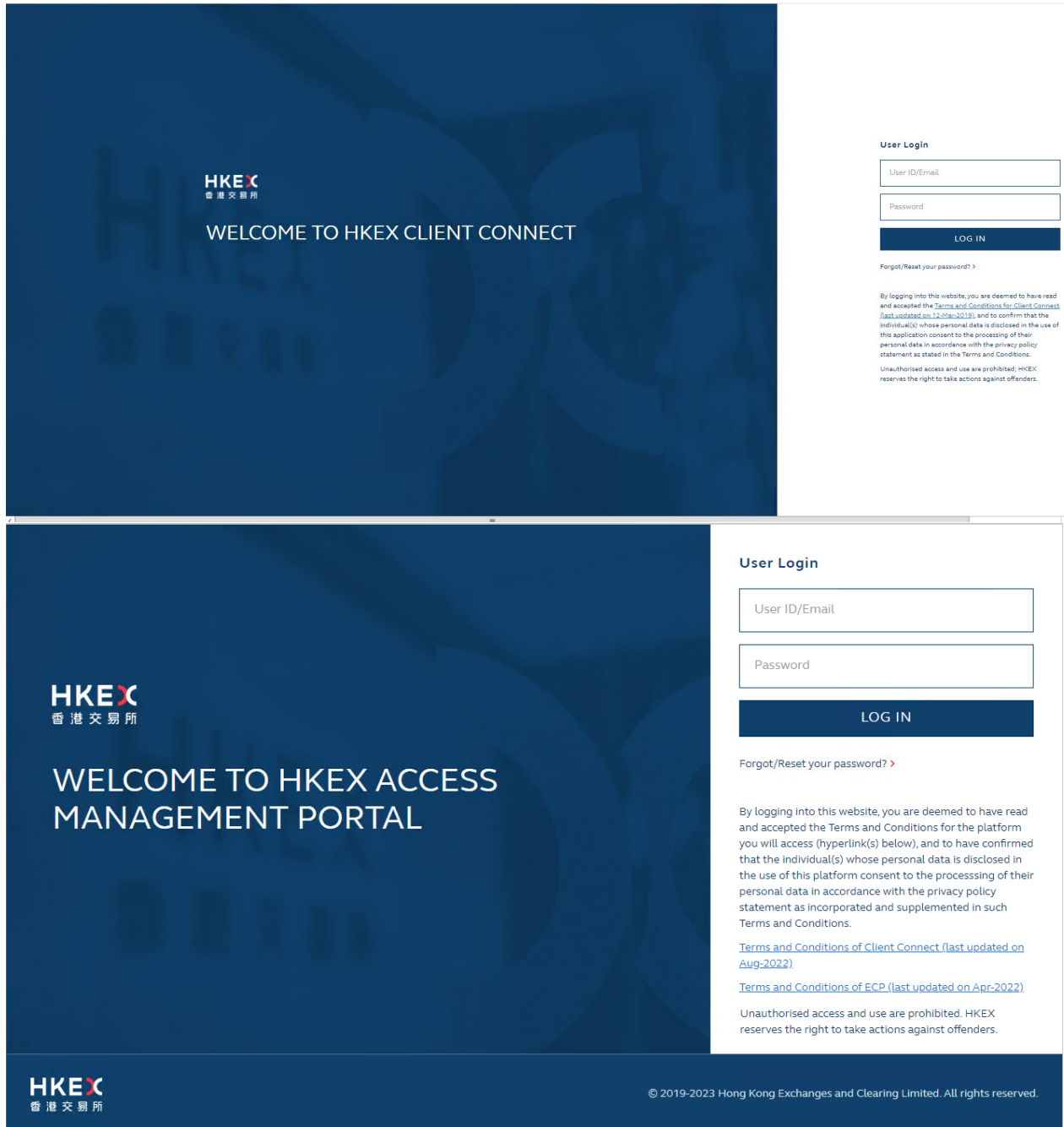
The screenshot displays the HKEX ECP Web Interface. At the top, there is a 'COOKIE POLICY' banner. The main content area is split into two columns. The left column features the HKEX logo and the text 'WELCOME TO THE ELECTRONIC COMMUNICATION PLATFORM (ECP)'. The right column contains the text 'Log on to the ECP through the following Authentication Systems:' followed by two buttons: 'HKEX Client Connect' and 'SFC WINGS (1)'. Below the buttons, there is a note: '(1) For SFC-licensed corporations and registered institutions'. A detailed disclaimer follows, stating that by logging in via HKEX Client Connect, users are deemed to have read and accepted the Terms and Conditions for Electronic Communication Platform and the Terms and Conditions for HKEX Client Connect. A footer at the bottom of the page contains the HKEX logo and 'Copyright © 2022-2023 HKEX. All rights reserved'.

#### 5.1.1. Login with ~~Client Connect~~ **HKEX Access Management Portal (formerly “Client Connect”)**

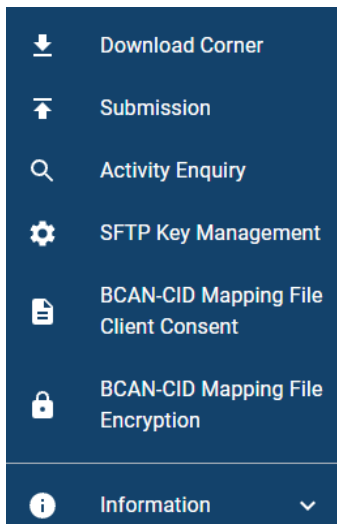
This is applicable only for EPs or non-EP Relevant Regulated Intermediaries who have registered a ~~Client Connect~~ **HKEX Access Management Portal** account.

ECP user can access ECP Web Interface through ~~Client Connect~~ **HKEX Access Management Portal** authentication. Go to ECP Web Interface URL, click “~~HKEX Client Connect~~ **HKEX Access Management Portal**” button and it redirects the user to ~~Client Connect~~ **HKEX Access Management Portal** login page to login with ~~Client Connect~~ **HKEX Access Management Portal** account.

[Client ConnectHKEX Access Management Portal](#) has employed 2-Factor Authentication to enhance password security. Therefore it is required to enter: (1) the Login Password, and (2) One Time Password (OTP) received from email or mobile application "ForgeRock Authenticator". For setup of [Client ConnectHKEX Access Management Portal](#) login accounts, please refer to [Client ConnectAccess Management User ManualGuide](#).



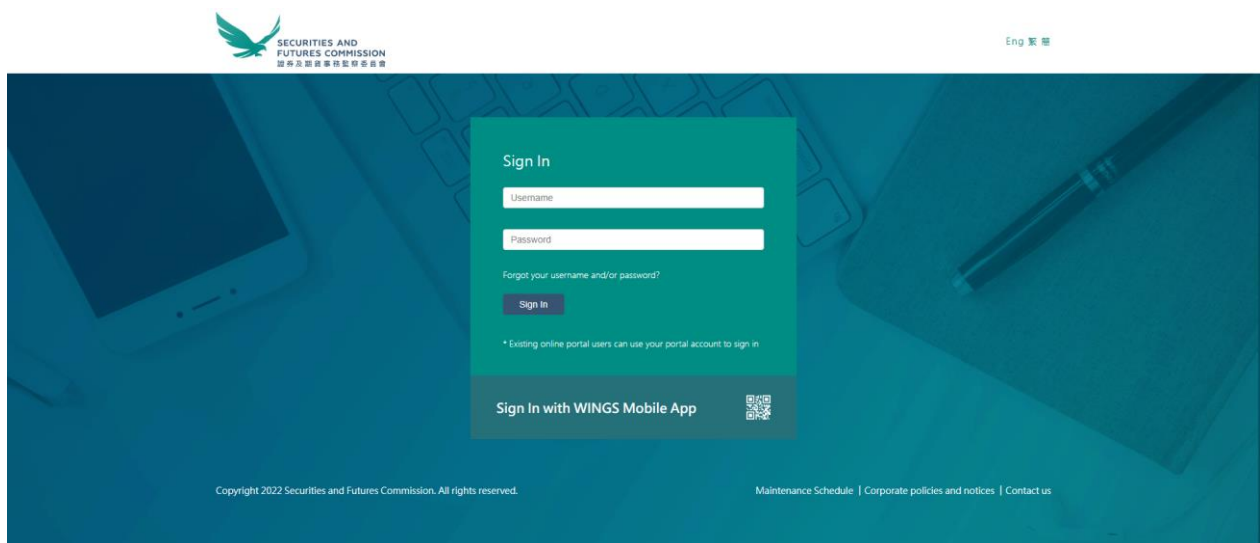
After successful login, there are six main functions shown on the left navigation menu:



### 5.1.2. Login with SFC WINGS

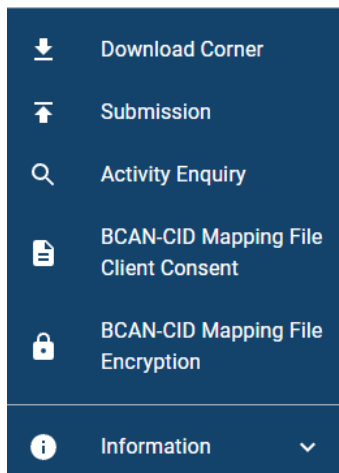
This applicable for both EPs and non-EP Relevant Regulated Intermediaries.

EPs/non-EP Relevant Regulated Intermediaries can access ECP Web Interface through SFC WINGS authentication. Go to ECP Web Interface URL, click “SFC WINGS” button and it redirects the user to SFC WINGS login page to login with SFC WINGS’ username and password. Please note that EPs cannot submit BCAN Change for LP Quote Report, BCAN Error Report and Off-exchange Trade BCAN (Buy-side) Report to HKEX if they authenticate through the SFC WINGS platform.



After successful login, there are five main functions shown on the navigation menu:





## 5.2. ECP SFTP Interface

### 5.2.1. IP Address of SFTP Facilities

IP addresses of the Production ECP SFTP Interface are as follows:

#### Connection through OCG-C network interface / ECP (non-EP) circuit

| SFTP Facility at primary data center | SFTP Facility at secondary data center |
|--------------------------------------|--|
| 10.1.93.131 Port 18801               | 10.2.93.131 Port 18801                 |
| 10.1.93.132 Port 18801               | 10.2.93.132 Port 18801                 |

#### Connection through CCCG network interface

| SFTP Facility at primary data center | SFTP Facility at secondary data center |
|--------------------------------------|--|
| 10.1.145.131 Port 18801              | 10.2.145.131 Port 18801                |
| 10.1.145.132 Port 18801              | 10.2.145.132 Port 18801                |

### 5.2.2. Registration of SFTP Access

In order to connect to Production SFTP facilities, EPs/non-EP Relevant Regulated Intermediaries must:

- Install SDNet/2 circuit or HSN (for EP only)
- Setup login account in [Client ConnectHKEX Access Management Portal](#) with SFTP access right
- Register SFTP public key (Please refer to Section 3.5.1 “Current Public Key Registration”)
- Register SFTP remote IP Addresses (Please refer to Section 3.5.3 “Set Remote IP Address”)

Once EP/non-EP Relevant Regulated Intermediary has the public key files and IP addresses of SFTP client workstation ready, they could self-register their SFTP access via SFTP Key Management at ECP Web Interface. Please refer to Section 3.5 “SFTP Key Management”.

### 5.2.3. Login SFTP facilities

After registering SFTP access, user can then use standard SFTP Client to login ECP SFTP Interface via SDNet with [Client ConnectHKEX Access Management Portal](#) Login ID and respective private key from one of the registered remote IP Addresses.

### 5.2.4. Logout

User can use standard Logout command to logout from SFTP facility.

### 5.3. File Size Limit

| File Name                                 | File ID  | Max zip file size per submission |
|---|----------|----------------------------------|
| BCAN-CID Mapping File                     | HBCNMAPP | 700MB                            |
| Aggregated Transaction Report             | HBCNATBN | 100MB                            |
| BCAN Change Report                        | HBCNBCBN | 100MB                            |
| BCAN Change for LP Quote Report           | HBCNLQBN | 100MB                            |
| BCAN Error Report                         | HBCNERBN | 100MB                            |
| Off-exchange Trade BCAN (Buy-side) Report | HBCNOTBN | 100MB                            |

### 5.4. ~~Client Connect~~HKEX Access Management Portal Business Function Assignment

For EPs/non-EP Relevant Regulated Intermediaries' business user account that will be logging in with [Client ConnectHKEX Access Management Portal](#) to submit BCAN-CID Mapping File and Reporting Forms, it should assign the following Identity and Business Functions by their Delegated Administrator (DA).

For EPs

| Identity                              | Business Function |
|---------------------------------------|-------------------|
| ECP SEHK Participant                  | EU_ECPTO          |
| ECP Relevant Regulated Intermediaries | EU_ECPHKIDR       |

To use ECP SFTP Service, the additional business function "EU\_ECPSFTP" is required.

For non-EP Relevant Regulated Intermediaries to setup ECP SFTP service

| Identity                              | Business Function         |
|---------------------------------------|---------------------------|
| ECP Relevant Regulated Intermediaries | EU_ECPHKIDR<br>EU_ECPSFTP |

Please refer to [Client ConnectAccess Management User Manual Guide](#) on how to assign the business function to users.

#### **Remark**

For EP/non-EP Relevant Regulated Intermediaries logging in with SFC WINGS, it does not requires additional access right setup.

## 6. End-to-End Test Environment Connectivity Details

Below configuration setting is applicable for End-to-End (E2E) Test only.

### 6.1. ECP Web Interface

End-to-End ECP Web Interface URL: <https://ecp2.e2etest.hkex.com.hk>

#### 6.1.1. Login with OTP-C E2E Test Portal

This is applicable only for EPs or non-EP Relevant Regulated Intermediaries who have OTP-C E2E Test Portal account.

ECP user can access End-to-End ECP Web Interface with OTP-C E2E Test Portal authentication. Go to End-to-End ECP Web Interface URL, click “OTP-C E2E Test Portal” button and it redirects the user to Test Portal login page to login with Test Portal user ID and password.

Non-EP Relevant Regulated Intermediaries are required to apply an OTP-C E2E Test Portal account only if the user prefer to use SFTP facilities for file submission. Please refer to “End-to-End Test Package for non-EP RRI” for application or email to [bsssupport@hkex.com.hk](mailto:bsssupport@hkex.com.hk) by business email address for queries.

#### 6.1.2. Login with SFC WINGS

EPs/non-EP Relevant Regulated Intermediaries can access ECP Web Interface through SFC WINGS authentication. Go to End-to-End ECP Web Interface URL, click “SFC WINGS” button and it redirects the user to SFC WINGS login page to login with SFC WINGS E2E Test Account. Please note that EPs cannot submit BCAN Change for LP Quote Report, BCAN Error Report and Off-exchange Trade BCAN (Buy-side) Report to HKEX if they authenticate through SFC WINGS platform.

For End-to-End SFC WINGS registration, Responsible Officers (RO) and Executive Officers (EO) of the Relevant Regulated Intermediaries should apply for a test account via the SFC’s WINGS platform (<https://wings.sfc.hk>). Details will be provided in due course.

### 6.2. ECP SFTP Interface

#### 6.2.1. IP Address of SFTP Facilities

IP addresses of End-to-End ECP SFTP Interface are as follows:

##### Connection through OCG-C network interface / ECP (non-EP) circuit

###### End-to-End SFTP Test Facility

10.1.93.228 Port 18801

##### Connection through CCCG network interface

###### End-to-End SFTP Test Facility

10.1.145.228 Port 18801

#### 6.2.2. Registration of SFTP Access

In order to connect to End-to-End test SFTP facility, EPs/non-EP Relevant Regulated Intermediaries must:

- Install SDNet/2 Testing Line or Hosting Services Testing Network (HSTN) (for EP only)
- Register OTP-C E2E Test Portal user ID or had OTP-C E2E Test Portal user ID in place

- Register SFTP public key (Please refer to Section 3.5.1 “Current Public Key Registration”)
- Register SFTP remote IP Addresses (Please refer to Section “3.5.3 Set Remote IP Address”)

Non-EP Relevant Regulated Intermediary should register OTP-C E2E Test Portal user ID prior to access End-to-End ECP SFTP Interface.

Non-EP Relevant Regulated Intermediary who prefer to use SFTP facilities should refer to “End-to-End Test Package for non-EP RRI” for SDNet/2 Testing Line installation and OTP-C E2E Test Portal account creation details or email [bsssupport@hkex.com.hk](mailto:bsssupport@hkex.com.hk) by business email address for queries.

Once EP/non-EP Relevant Regulated Intermediary has the public key files and IP addresses of their SFTP client workstation ready, they could self-register their SFTP access via SFTP Key Management at End-to-End ECP Web Interface. Please refer to Section 3.5 “SFTP Key Management”.

### 6.2.3. Login SFTP Facilities

After registering SFTP access, user can then use standard SFTP Client to login End-to-End test ECP SFTP Interface via SDNet/2 Testing Line with Test Portal user ID and respective private key from one of the registered remote IP Addresses.

### 6.2.4. Logout

User can use standard Logout command to logout from SFTP facility.

## 6.3. File Size Limit

| File Name                                 | File ID  | Max zip file size per submission |
|---|----------|----------------------------------|
| BCAN-CID Mapping File                     | HBCNMAPP | 1MB                              |
| Aggregated Transaction Report             | HBCNATBN | 1MB                              |
| BCAN Change Report                        | HBCNBCBN | 1MB                              |
| BCAN Change for LP Quote Report           | HBCNLQBN | 1MB                              |
| BCAN Error Report                         | HBCNERBN | 1MB                              |
| Off-exchange Trade BCAN (Buy-side) Report | HBCNOTBN | 1MB                              |