Orion Trading Platform – Securities Market (OTP-C)

Self-Match Prevention (SMP)

File Interface Specification

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Prepared by:	HKEX
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Modification History

Version	Date	Modified By	Synopsis
1.0	Mar 2024	HKEX	First Issue

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1 Overview

This document serves as a reference guide for Exchange Participants (EPs) on the maintenance of Self-Match Prevention (SMP) ID for Hong Kong Securities Market.

To support the trading with Self-Match Prevention (SMP) feature in Hong Kong securities market, EPs need to apply for the use of SMP by submitting Application for the Use and Maintenance of Self-Match Prevention (SMP) ID in Securities Market ("SMP ID Maintenance Form")/ Application for the use of existing Self-Match Prevention (SMP) ID in Securities Market ("Use of Existing SMP ID Form") via the Electronic Communication Platform (ECP) (https://ecp2.hkex.com.hk/) facility provided by HKEX. The roles of EPs are defined as follows:

Primary EP means an EP who initiates the request to create an SMP ID.

Additional EP means an EP, which is not the Primary EP, who applies for the use of existing SMP ID.

1.1 Summary of Interface Files and Operation Flow

List of SMP related interface files that are involved in the preparation and submission process of SMP ID maintenance are as follows:

No	Time	Party	Activity
1	7:00am – 4:00pm	EP	a) Submission of "SMP ID Maintenance Form" (CSMPREQ).
			b) Submission of "Use of Existing SMP ID Form" (CSMPCST).
2	5:30pm	HKEX	a) Distribution of SMP File Submission Status Report (CSMPSTS).
			b) Distribution of SMP ID Full Image Report (Day-end) (CSMPFIME).
			c) Distribution of SMP ID Delta Change Report (Day-end) (CSMPDLTE).
3	7:30am next trading day	HKEX	a) Distribution of SMP ID Full Image Report (Morning) (CSMPFIMM).
			b) Distribution of SMP ID Delta Change Report (Morning) (CSMPDLTM).
4	After 12:00am the next calendar day.	HKEX	System cleanup – all files will be removed from the system.

1.2 File Submission and Distribution Channel

EPs are allowed to submit "SMP ID Maintenance Form" / "Use of Existing SMP ID Form" interface files on every Hong Kong Securities Market trading day[1] within submission hour (refer to section 1.1) by following channels:

1. ECP Web Interface via Internet; or
2. ECP SFTP interface via Security and Derivatives Network/2 (SDNet/2) or HKEX Service Network (HSN)

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[1] In case trading on a scheduled Hong Kong Securities Market trading day is suspended due to severe weather conditions, EPs are still allowed to submit the Forms according to the schedule specified in section 1.1 of this specification.

If there are multiple submissions throughout the day, all the submissions will be processed by the system according to the ascending order of the submission time in general.

Please refer to "ECP User Guide" for the details of file submission and download via ECP.

1.3 Data Format Definition

Data format commonly used in this document are as follows:

Format/Type	Synopsis
X(n)	Alphanumeric data of *n* bytes. Left-justified with trailing spaces unless otherwise stated.
9(n)	Numeric field with maximum of *n* digits. No leading zeroes. Right-justified and fill up with spaces if less than *n* digits unless otherwise stated.
YYYYMMDD	Date field, where YYYY stands for the year, MM stands for the month, and DD stands for the day, e.g. 20210401.
HH:MM:SS	Time field, where HH stands for hour, MM stands for minute, and SS stands for second, e.g. 15:23:04, 09:20:23.

2 File Specification

2.1 SMP ID Maintenance Form

2.1.1 Description

Primary EP can submit the "SMP ID Maintenance Form" to:

- create SMP ID;

- share existing SMP ID with Additional EP;

- remove SMP ID sharing from Additional EP;

- terminate SMP ID; or

- change SMP Instruction.

EPs are allowed to submit "SMP ID Maintenance Form" on every Hong Kong Securities Market trading day within submission hours. Multiple submissions are allowed and all the submissions will be processed by HKEX according to the ascending order of the submission time in general.

Operations:

1. For Creation of SMP ID:
   a. EP can raise request to create a new SMP ID.
   b. SMP ID will be generated by HKEX. EP who raises the creation request will be treated as the Primary EP of the SMP ID.
   c. After the creation request is completed, the Primary EP can submit orders with the SMP ID on the next trading day.

2. For Sharing of SMP ID with Additional EP:
   a. Only Primary EP can raise request to share its managed SMP ID to other firms.
   b. Each "SMP ID Maintenance Form" can raise a request to share an existing SMP ID to only one EP. It needs to submit multiple requests in order to share the existing SMP ID to multiple EPs.
   c. For each sharing request, target Additional EP should submit the corresponding "Use of Existing SMP ID Form" to apply for using an existing SMP ID. HKEX will process the sharing request only when the application from Additional EP is well received. If no application from Additional EP is received within 7 calendar days, the sharing request will be expired.
   d. After successful sharing of the existing SMP ID, Primary EP and the Additional EP can submit orders with the SMP ID on the next trading day. Primary EP, Additional EP, if any, and other relevant Additional EPs of the same SMP ID will be notified via SMP ID Full Image Report and SMP ID Delta Change Report.

3. For Removal of SMP ID Sharing from Additional EP:
   a. Only Primary EP can raise request to remove SMP ID sharing from an existing Additional EP.
   b. Application from the existing Additional EP is not required.
   c. After the request of removing SMP ID sharing from Additional EP is completed, the corresponding Additional EP can no longer use such SMP ID from the next trading day. Primary EP, Additional EP, if any, and other relevant Additional EPs

of the same SMP ID will be notified via SMP ID Full Image Report and SMP ID Delta Change Report.

4. For Termination of SMP ID:

   a. Only Primary EP can raise request to terminate its managed SMP ID.

   b. After the termination request is completed, the Primary EP and all Additional EP(s) can no longer use such SMP ID from the next trading day. Primary EP and all Additional EP(s) will be notified of the removal of such SMP ID via SMP ID Full Image Report and SMP ID Delta Change Report.

5. For Change of SMP Instruction:

   a. Only Primary EP can raise request to change the SMP Instruction of its managed SMP ID.

   b. After the change request is completed, new SMP Instruction will be effective for such SMP ID on the next trading day.

Once the "SMP ID Maintenance Form" is being processed by HKEX, the processing status will be included in the SMP File Submission Status Report (Please refer to Section 2.3). SMP File Submission Status Report will be distributed to EP on a daily basis. EP can keep track of the progress of their submitted requests via this report. If it fails to process a request, EP can check the result code from the report and re-submit the corrected "SMP ID Maintenance Form" again. If the Form has been processed successfully, the change will be reflected in SMP ID Full Image Report and SMP ID Delta Change Report.

All files will be removed from the submission folder in ECP after system cleanup.

2.1.2 File Layout

Summary

File ID	CSMPREQ
File Name	`CSMPREQ_<PARTICIPANT_ID>_<YYYYMMDD>.pdf` *where:* PARTICIPANT_ID = Participant ID of EP in the format of 5-digit number with leading zero. YYYYMMDD = Date of submission.
File Type	Fillable PDF Form
Submission Hours	7:00am to 4:00pm on Hong Kong Securities Market trading days.
Submission Path **(ECP SFTP Interface only)**	`/submission/CSMP`
Submission Page **(ECP Web Interface only)**	`Submission` function of ECP Web Interface. Click "Securities Market - Application for the Use and Maintenance of Self-Match Prevention (SMP) ID" hyperlink for submission.

Note:

1. Each Form can raise one SMP maintenance action only.

2. All requests will be reviewed by HKEX staff before execution.

3. The request will be treated as error and rejected under the following conditions, e.g.:

   a. PDF format is corrupted (e.g. missing fillable form inside the PDF file)

   b. Mandatory field values are missing.

   c. EP who uploads the form is not the Primary EP of the SMP ID (except SMP ID Creation).

   d. SMP ID doesn't exist in System.

   e. Additional EP Participant ID doesn't exist in System.

   f. Same request had been submitted and pending for execution by HKEX (except SMP ID Creation).

   Please refer to Appendix A.1 for the list of rejection codes.

2.2 Use of Existing SMP ID Form

2.2.1 Description

The "Use of Existing SMP ID Form" is used by Additional EP to raise a request of using an existing SMP ID.

If Primary EP submits a "SMP ID Maintenance Form" to request for sharing a SMP ID, Primary EP should notify the target Additional EP to provide an application for using such SMP ID.

Additional EP should submit the "Use of Existing SMP ID Form" on Hong Kong Securities Market trading day within submission hours for using the SMP ID.

All files will be removed from the submission folder in ECP after system cleanup.

2.2.2 File Layout

Summary

File ID	CSMPCST
File Name	CSMPCST_<PARTICIPANT_ID>_<YYYYMMDD>.pdf *where:* PARTICIPANT_ID = Participant ID of EP in the format of 5-digit number with leading zero. YYYYMMDD = Date of submission.
File Type	Fillable PDF Form
Submission Hours	7:00am to 4:00pm on Hong Kong Securities Market trading days.
Submission Path **(ECP SFTP Interface only)**	/submission/CSMP
Submission Page **(ECP Web Interface only)**	Submission function of ECP Web Interface. Click "Securities Market - Application for the Use and Maintenance of Self-Match Prevention (SMP) ID" hyperlink for submission.

Note:

1. The application request will appear in the SMP File Submission Status Report until:
    a. The request has been processed or rejected.
    b. No SMP ID sharing request from Primary EP matching with this application for 7 calendar days.
2. The application will be treated as error under the following conditions, e.g.:
    a. PDF format is corrupted (e.g. missing fillable form inside the PDF file)
    b. Mandatory field values are missing.
    c. SMP ID doesn't exist in System.
    d. Primary EP Participant ID doesn't exist in System.
    e. Primary EP Participant ID does not match with the SMP ID.

      f.   Same application request had been submitted to HKEX.

      g.   Use of the existing SMP ID by Additional EP is already effective in the System.

Please refer to Appendix A.1 for the list of rejection codes.

2.3   SMP File Submission Status Report

2.3.1 Description

The SMP File Submission Status Report contains the latest status of the "SMP ID Maintenance Form" / "Use of Existing SMP ID Form" submitted by EP. Completed and failed requests would be shown on Trading Day T; while outstanding requests will be kept until it turns completed or failed.

SMP File Submission Status Report is distributed to the respective EPs at 5:30pm on each Hong Kong Securities Market trading day. EPs without outstanding request will not receive this file.

EPs can keep trace of the status of their submission from this report. If there is any error when processing the files, EP can check the rejection code from the report and resubmit the corrected files again.

Please refer to Appendix A.1 for the list of rejection codes.

2.3.2 File Layout

Summary

File ID	CSMPSTS
File Name	`CSMPSTS_<PARTICIPANT_ID>_<YYYYMMDD>.csv`, and is zipped into: `CSMPSTS_<PARTICIPANT_ID>_<YYYYMMDD>.zip` *where:* PARTICIPANT_ID = Participant ID of EP in the format of 5-digit number with leading zero. YYYYMMDD = Date of submission.
File Type	Text file in comma-separated values (CSV) format and delimited by DOS newline characters (CR+LF). ASCII encoded.
Distribution Time	After 5:30pm on Hong Kong Securities Market trading days.
Distribution Path (ECP SFTP Interface only)	`/download/CSMP`
Distribution Page (ECP Web Interface only)	`Download Corner` of ECP Web Interface. Under "Securities Market - SMP File Submission Status Report, Full Image Report, and Delta Change Report" folder.

File Format

Field No.	Field	Format	Synopsis
1	Date	YYYYMMDD	File submission date.

2	Time	HH:MM:SS	File submission time.
3	Action	X(30)	Action of the submission: For "SMP ID Maintenance Form" Create – Creation of SMP ID Terminate – Termination of SMP ID Sharing – Sharing of SMP ID Remove Sharing – Removal of SMP ID Sharing Change Instruction – Change of SMP Instruction For "Use of Existing SMP ID Form" Apply Usage – Application on the use of existing SMP ID
4	SMP ID	9(9)	SMP ID For Creation of SMP ID SMP ID will be available after the request had been completed. For other Actions This field reflects the SMP ID filled in the request form.
5	Primary EP Participant ID	9(5)	Participant ID of the Primary EP of the SMP ID.
6	Additional EP Participant ID	9(5)	Participant ID of Additional EP of the SMP ID. (Only available when Action = Sharing / Remove Sharing)
7	SMP Instruction	X(1)	SMP Instruction A – Cancel Aggressive P – Cancel Passive (Only available when Action = Create / Change Instruction)
8	Creation Ref No	9(4)	The Creation Ref. No. filled in the Request Form.
9	Status	X(40)	Status of the submission: For "SMP ID Maintenance Form" Wait for Application from Other EP In Progress Completed Rejected For "Use of Existing SMP ID Form" In Progress Completed Rejected
10	Rejection Code	9(4)	Rejection code of the request only when the Status is "Rejected". Please refer to Appendix A.1 for the list of rejection codes.

Example

```
Date,Time,Action,SMP ID,Primary EP Participant ID,Additional EP Participant ID,SMP
Instruction,Creation Ref No,Status,Rejection Code
20230511,13:21:01,Sharing,210010019,100,111,,,Wait for Application from Other EP,
20230511,13:22:01,Sharing,210010019,100,123,,,In Progress,
20230511,09:40:11,Terminate,210010097,100,,,,Completed,
```

```
20230511,13:18:14,Remove Sharing,210010019,100,321,,,In Progress,
20230511,13:19:40,Remove Sharing,210010019,100,321,,,Rejected,1242
20230512,09:35:21,Create,,100,,A,1,In Progress,
20230512,09:03:21,Create,210010231,100,,P,2,Completed,
20230512,10:11:23,Apply Usage,210010035,310,,,,In Progress,
20230512,12:02:52,Change Instruction,210010056,100,,A,,Completed,
```

2.4   SMP ID Full Image Report

2.4.1   Description

The SMP ID Full Image Report contains the list of SMP ID that EP could use for trading supporting Self-Match Prevention (SMP) features.

This report includes the following information:

- SMP IDs managed by the EP
- SMP IDs shared by other Primary EPs
- Primary EP Participant ID of the SMP ID
- Full list of Primary EP and Additional EPs sharing the SMP ID

Individual Full Image Report is distributed to the respective EPs twice per Hong Kong Securities Market trading day:

1. SMP ID Full Image Report (Day-end)

    It is generated and distributed to EP at 5:30pm. It contains the list of SMP ID to be effective next Trading Day.

2. SMP ID Full Image Report (Morning)

    It is generated and distributed to EP at 7:30am. It contains the final list of SMP ID is effective on current Trading Day.

EPs are reminded to check the records in this file to ensure that they are trading using the most update SMP ID records.

2.4.2   File Layout

Summary

File ID	CSMPFIM

File Name	SMP ID Full Image Report (Day-end)
	`CSMPFIME_<PARTICIPANT_ID>_<YYYYMMDD>.csv`, and is zipped into:
	`CSMPFIME_<PARTICIPANT_ID>_<YYYYMMDD>.zip`
	
	SMP ID Full Image Report (Morning)
	`CSMPFIMM_<PARTICIPANT_ID>_<YYYYMMDD>.csv`, and is zipped into:
	`CSMPFIMM_<PARTICIPANT_ID>_<YYYYMMDD>.zip`
	
	where:
	PARTICIPANT_ID = Participant ID of EP in the format of 5-digit number with leading zero.
	YYYYMMDD = Date of submission.

File Type	Text file in comma-separated values (CSV) format and delimited by DOS newline characters (CR+LF).

	ASCII encoded.
Distribution Time	SMP ID Full Image (Day-end) 1. 5:30pm on Hong Kong Securities Market trading days. SMP ID Full Image (Morning) 2. 7:30am on Hong Kong Securities Market trading days.
Distribution Path **(ECP (SFTP) Interface only)**	`/download/CSMP`
Distribution Page **(ECP Web Interface only)**	`Download Corner` of ECP Web Interface. Under "Securities Market - SMP File Submission Status Report, Full Image Report, and Delta Change Report" folder.

File Format

Field No.	Data	Format	Synopsis
1	Managed by EP	X(1)	N – Managed by the EP. S – Shared by other EP.
2	SMP ID	9(9)	SMP ID
3	Primary EP Participant ID	9(5)	Participant ID of the Primary EP of the SMP ID.
4	SMP Instruction	X(1)	SMP Instruction A – Cancel Aggressive P – Cancel Passive
5	SMP ID Status	X(1)	SMP ID Status A – Active S – Suspended
6	Additional EP Participant ID List	9(5) x N	List of Additional EP Participant ID (excluded Primary EP) sharing this SMP ID with character '|' as delimiter, e.g. 1001|1002.

Example for EP 100

1. EP 100 is the Primary EP of SMP ID 210010019 and shared with EP 321.
2. EP 100 is the Primary EP of SMP ID 210010097.
3. EP 100 is the Primary EP of SMP ID 210010184 which is suspended.
4. EP 310 shared SMP ID 210010035 to EP 100.
5. EP 310 shared SMP ID 210010100 to EP 100, 111 and 123.
6. EP 310 shared SMP ID 210010113, which is suspended, to EP 100 and 333.

Then following records will appear in EP 100's SMP ID Full Image Report:

```
Managed by EP,SMP ID,Primary EP Participant ID,SMP Instruction,SMP ID Status,Additional EP
Participant ID List
N,210010019,100,A,A,321
N,210010097,100,A,A,
N,210010184,100,A,S,
S,210010035,310,P,A,100
S,210010100,310,A,A,100|111|123
S,210010113,310,P,S,100|333
```

2.5 SMP ID Delta Change Report

2.5.1 Description

The SMP ID Delta Change Report highlights the changes of SMP ID and SMP ID sharing related to an EP.

If the SMP ID is managed by this EP, or the SMP ID is managed by other EP and is shared with this EP, the following changes will be covered in this report:

- Creation of SMP ID
- Termination of SMP ID
- Sharing of SMP ID
- Removal of SMP ID Sharing
- Change of SMP Instruction
- Suspension of SMP ID
- Resumption of SMP ID

Individual SMP ID Delta Change Report is distributed to the respective EPs twice per Hong Kong Securities Market trading day:

1. SMP ID Delta Change Report (Day-end)

   It is generated and distributed to EPs at 5:30pm. It contains the changes of SMP ID and SMP ID sharing that will be effective next Trading Day when comparing to current Trading Day.

2. SMP ID Delta Change Report (Morning)

   It is generated and distributed to EPs at 7:30am. It contains the changes of SMP ID and SMP ID sharing that is effective on current Trading Day when comparing to previous Trading Day.

EPs are reminded to check the records in this file to ensure that they are trading with the most updated SMP ID records.

2.5.2 File Layout

Summary

File ID	CSMPDLT
File Name	SMP ID Delta Change Report (Day-end) `CSMPDLTE_<PARTICIPANT_ID>_<YYYYMMDD>.csv`, and is zipped into: `CSMPDLTE_<PARTICIPANT_ID>_<YYYYMMDD>.zip` SMP ID Delta Change Report (Morning) `CSMPDLTM_<PARTICIPANT_ID>_<YYYYMMDD>.csv`, and is

	zipped into:
	
	`CSMPDLTM_<PARTICIPANT_ID>_<YYYYMMDD>.zip`
	
	where:
	  PARTICIPANT_ID = Participant ID of EP in the format of 5-digit number with leading zero.
	  YYYYMMDD = Date of submission.

File Type	Text file in comma-separated values (CSV) format and delimited by DOS newline characters (CR+LF). ASCII encoded.
Distribution Time	SMP ID Delta Change Report (Day-end) 1. 5:30pm on Hong Kong Securities Market trading days. SMP ID Delta Change Report (Morning) 2. 7:30am on Hong Kong Securities Market trading days.
Distribution Path **(ECP (SFTP) Interface only)**	`/download/CSMP`
Distribution Page **(ECP Web Interface only)**	`Download Corner` of ECP Web Interface. Under "Securities Market - SMP File Submission Status Report, Full Image Report, and Delta Change Report" folder.

File Format

Field No.	Data	Format	Synopsis
1	SMP ID	9(9)	SMP ID
2	Primary EP Participant ID	9(5)	Participant ID of the Primary EP of the SMP ID.
3	Action	X(30)	Action of the change: Create – Creation of SMP ID Terminate – Termination of SMP ID Sharing – Sharing of SMP ID Remove Sharing – Removal of SMP ID Sharing Change Instruction – Change of SMP Instruction Suspend – Suspension of SMP ID Resume – Resumption of SMP ID
4	SMP Instruction	X(1)	SMP Instruction A – Cancel Aggressive P – Cancel Passive (Only available when Action = Create / Change Instruction)
5	Additional EP Participant ID	9(5)	Participant ID of Additional EP of the SMP ID. (Only available when Action = Sharing / Remove Sharing)

Example for EP 100

1.   A new SMP ID (210010100) is created for EP 100.

2. SMP ID (210010097) (managed by EP 100) will be terminated.

3. SMP ID (210010070) (managed by EP 310 and shared with EP 100) will be terminated.

4. SMP ID (210010019) (managed by EP 100) will be shared with EP 111 and EP 123.

5. SMP ID (210010019) (managed by EP 100) will be removed sharing from EP 321.

6. SMP ID (210010024) (managed by EP 120) will be shared with EP 100.

7. SMP ID (210010035) (managed by EP 310) will be removed sharing from EP 100.

8. SMP ID (210010121) (managed by EP 310 and shared with EP 100 & EP 120) will be removed sharing from EP 120.

9. SMP Instruction of SMP ID (210010056) (managed by EP 100) is changed to 'P'.

10. SMP Instruction of SMP ID (210010062) (managed by EP 310 and shared with EP 100) is changed to 'P'.

11. SMP ID (210010137) (managed by EP 100 and shared with EP 330) will be suspended.

12. SMP ID (210010145) (managed by EP 100 and shared with EP 330) will be resumed from suspension.

13. SMP ID (210010159) (managed by EP 330 and shared with EP 100) will be suspended.

14. SMP ID (210010168) (managed by EP 330 and shared with EP 100) will be resumed from suspension.

Then following records will appear in the SMP ID Delta Change Report of EP 100:

```
SMP ID,Primary EP Participant ID,Action,SMP Instruction,Additional EP Participant ID
210010100,100,Create,A,
210010097,100,Terminate,,
210010070,310,Terminate,,
210010019,100,Sharing,,111
210010019,100,Sharing,,123
210010019,100,Remove Sharing,,321
210010024,120,Sharing,,100
210010035,310,Remove Sharing,,100
210010121,310,Remove Sharing,,120
210010056,100,Change Instruction,P,
210010062,310,Change Instruction,P,
210010137,100,Suspend,,
210010145,100,Resume,,
210010159,330,Suspend,,
210010168,330,Resume,,
```

A   Appendix I

A.1   Rejection Codes used in SMP File Submission Status Report

Rejection Code	Synopsis
1101	Submitted file is corrupted (e.g. missing fillable form inside the PDF).
1102	Invalid value of Action (e.g. not yet selected).
1103	Missing or incorrect SMP ID.
1104	Missing or incorrect Additional EP Participant ID.
1107	Missing or incorrect Primary EP Participant ID.
1108	Submitter Participant ID doesn't match with Participant ID in file name.
1109	Missing or incorrect Submitter Participant ID.
1111	In Maintenance Form, Submitter Participant ID is the same as Additional EP Participant ID.
1112	In Use of Existing SMP ID Form, Submitter Participant ID is the same as Primary EP Participant ID.
1120	Invalid value of SMP Instruction (e.g. not yet selected)
1121	Missing or incorrect Creation Ref. No.
1224	Request error: Use of Existing SMP ID application already received.
1241	Request error: Not the Primary Firm of SMP ID.
1242	Request error: Duplicated request.
1244	Request error: SMP ID not found or terminated.
1245	Request error: Submitter Participant ID not found.
1246	Request error: Primary EP Participant ID not found.
1247	Request error: Additional EP Participant ID not found.
1249	Request error: SMP ID Sharing already exists.
1250	Request error: SMP ID Sharing does not exist.
1251	Request error: No change to SMP Instruction.
1252	Request error: Please contact the Primary EP.
1301	Execution error: Number of active SMP ID limit exceeded.
1302	Execution error: SMP ID Sharing limit exceeded.
1303	Request / Application of use of existing SMP ID is expired.
2001	On EP request.
2997	Incorrect information provided.
2998	Insufficient information provided.
2999	Please contact HKEX.