

Application for the OMnet API

Derivatives Trading

Hong Kong Exchanges and Clearing Limited

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Flowchart for OAPI Certification Test



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Application Form for OAPI under Genium Platform
(Version 1.4.1)

Exchange Participant :							
The OAPI program is developed from the following Exchange-provided library: (Please put a " \sqrt " in the appropriate box)							
Image: Windows Server 2008 (32-bit)Image: Red Hat Enterprise Linux 5 (32-bit)Image: SunOS 5.10Image: Windows Server 2008 (64-bit)Image: Red Hat Enterprise Linux 5 (64-bit)Image: SunOS 5.10							
Version number of Operating System us	sed by the OAPI program:						
The OAPI program is connection to:	□ Network Gateway(NG) □ Central Gateway(CG) □ Both NG and CG						
Our OAPI program will perform the follo	owing function(s): (Please put a " $$ " in the appropriate box)						
 Market Making function (must support item 1, 2 and 3 in the following functionality list) Trading function (must support item 1, 2 and 4 in the following functionality list) Price Feed function (must support item 1 and 5 in the following functionality list) 							
The OAPI program do not support price HKATS NG by other OAPI program Information Service Vendor:	e feed function, the market data source from: Orion Market Data Platform – Derivatives Market (OMD-D)						
The OAPI program can support trading beyond mid-night: 🗖 Yes 🗖 No / Not applicable							
Number of OAPI Connection(s) required to run the OAPI Program :							
for market making (must connect	cted via CG), for trading and for price feed						
Indicate the supported functions of your O first column together with answer for the co	API program in the following function list by putting a " $$ " in the appropriate box under the prresponding questions under the "Test successful / information" column, if applicable.						

Please note that most EPs and OAPI Vendor who failed HKATS OAPI certification test mainly because they were unfamiliar with the certification test requirement and their OAPI programs. To ensure certification test will be run smoothly, the column "Information or tested result" should be filled in by the tester who participates for the OAPI certification test. The tester should also read the OMex Genium OAPI Certification Test Script provided in Appendix B before the certification test.

** No exemption requests will be accepted after the certification test started. The OAPI program will be considered as failed in the certification if it cannot complete all mandatory functions.

Checklist:	Yes No
1) Supported functions were checked?	
2) Information or tested result provided?	
3) The tester has read the OMEx Genium OAPI Certification Test Script in Appendix B	

Functionality	Test successful / information			
1 Mandatany Eurotiana for all types of program	Yes	<u>N0</u>		
1. Mandatory Functions for all types of program				
1.1.1 Program Identification				
The program name and version defined in appl_ident_s in				
omni_login_t structure) is equal to or less than 18 characters (please				
fill in below table)?				
1.1.2 Genium Library Verification				
The program is using Genium Library?				
1.2 Change of expired Login Password				
The program can identify the expired logon and change the password				
successfully.				
1.3 Connection Status				
The program:				
1.5.1 can suit connect to the system after 15 minutes of no action (i.e.				
 no order or query activities)				
 1.3.2 has subscribed Big broadcast and poils it in regular manner				
1.3.3 will prevent re-login into HKATS after 9 consecutive login failure				
 attempts				
1.3.4 will make re-login attempt only after 1 minute				
1.3.5 will wait for at least 1 second after login before initiating the first				
transaction or query				
1.3.6 Load test on series update – Exchange suspends or resumes 10				
stocks underlying and the login account must not be disconnected /				
heartbeat automatically within 5 minutes.				
1.3.7 When Exchange suspends or resumes 10 stocks underlying in				
item 1.3.6, the login account without Stock Options trading rights must				
not be disconnected / heartbeat automatically within 5 minutes.				
1.4. The program has polling interval at most 250 milliseconds for				
any transactions which involve Read Events (Broadcast				
Messages)				
1.5 The program can get the message code and text description	Change	the login password or execute		
for any transactions which provide completion and/or transaction	an order	and get the following status in		
status	words:			
	Completi	on status		
	Message	Code:		
	Text Des	cription:		
	Transact	ion Status		
	Message	Code:		
	Text Des	cription:		
 1.6 The program will use empioning lessent as to lessent the testing				
no me program win use <u>ommapi_rogout_ex</u> to logout the testing				
account				

Functionality	Test successful / information
 1.7 Dessive Market Message (PI91) and identify helew	Yes No
 1.7 Receive Market Message (BioT) and identity below information: 1.7.1 message priority (message_priority_c) in text description: 1.7.2 message subject (message_header_s): 1.7.3 message content (text_line_s): 1.7.4 the market that receives the message (market code in series_t) (optional): 1.8 Confirmation on real-time addition of instrument series and 	
Tailor Made Combo (TMC) series: (Tester needs to perform the following without re-login the program)	
1.8.1 Confirmation on newly added TMC series by BU124 and BU126.Please write down the newly added TMC series names. (e.g.TMC_HSI/001; HKB85.00X4/L4SY):	Please provide below information : Date: TMC series name:
 1.8.2a Tester needs to confirm whether buy/sell for each series when buying and selling for the newly added series by BU126: (i.e. the definition of the combo series. e.g. for buying HKB85.00X4/L4SY-buy HKB85.00L4 and sell HKB85.00X4; for selling HKB85.00X4/L4SY - sell HKB85.00L4 and buy HKB85.00X4). 1.8.2b Tester needs to confirm the definition of an existing series by using DQ126: 	The definition of the newly added TMC:
 1.8.3 Handling the delist of TMC series 1.8.3.1 Program can identify which TMC series had been delisted. 1.8.3.2 Handling of a new TMC series with the same combo definition as a delist TMC series. (After step 1.8.3.1, the Exchange will add a new TMC series with the same combo definition. Tester can identify the newly added TMC series and the combo definition.) 	
1.9 Market Status (BI41 & DQ29) (i.e. PREOPEN, PREOPENALLOC, OPENALLOC, PAUSE, PRE_MKT_ACT, OPEN_DPL, OPEN & CLOSE)	
1.9.1 Use DQ29 to retrieve all the market status defined in the system.	List out all available market status:

	Functionality	Test successful / information
		<u>Yes No</u>
	(e.g. PREOPEN, PREOPENALLOC) and write it down:	Time:
		Market Status:
	1.9.3 Identify the change of "Instrument session state" on an	
	instrument series and underlying which is not same as trading session state.	
	1.10 Get expiration date and last trading time of a series	
	1.10.1 Check the last trading date and time of a series and/ or combo series	Series name:
		The last trading date and time are:
	1.10.2 Check a series with different last trading date and time, expiration date and effective expiration date. (e.g. HSI128000X5)	Series name:
		The last trading date and time are:
		The expiration date:
		The effective expiration date:
	1.11 Resumption and suspension of Trading (BI1 & BU124)	
	Exchange will resume and suspend a contract. Tester needs to confirm	
	which contracts have been resumed/suspended	
	1.11.1 Tester inputs orders/quotes on two contracts which one is going	
	to be suspended (for program that will input orders/quotes)	
	able to identify which contract is suspended	
	1 11 3 Exchange will resume the suspended contract and tester should	
	be able to identify which contract is resumed	
	1.11.4 Exchange will suspend the product by underlying and all	
	contracts based on this underlying will be suspended.	
	1.11.5 Exchange will resume the product suspended in previous steps and tester should be able to identify the resumed contracts.	
-	1.12 Handling of products with different features	
	1.12.1 The program can handle different products with different trading currencies.	
	1.12.1.1 Tester can identify the trading currency of the product (via the field "base_cur_s" field in DQ122)	And it can identify the trading currency for CUS market as:
	1.12.1.2 Tester can place and execute orders in products other than HKD, e.g. GLD and CNY futures.(Not applicable for OAPI with View-Only function only)	
	1.12.2 The program will use the tick size and strike price information from instrument class viaDQ122.	
	Classes with different tick sizes in stock options market are set up (e.g. XAB, XBC, XCC & XIC) 1.12.2.1 Tester can identify the tick size of an instrument class (via the field "dec_in_premium_n" field in DQ122)	The field "dec_in_premium_n" in transaction DQ122 [Instrument Class QUERY] for XAB Call is

<u>Functionality</u>	Test successful / information Yes No
1.12.2.2 Tester can identify the decimal place in the strike price of an instrument class (via the field "dec_in_strike_price_n" field in DQ122)	And the field "dec_in_strike_price_n" for XAB Call is
1.12.2.3 Tester can place orders into the instrument class with different tick size and decimal place and confirm the order details which include the series strike price and order price. (Not applicable for OAPI program with View-Only function only)	
1.12.3 The setting for Compression and encryption between OAPI Client and OMNet Gateway should be "ANY": - omniapi_set_option_ex(, OMNIAPI_OPT_COMPRESS, OMNIAPI_OPVAL_ANY);	
- omniapi_set_option_ex(, OMNIAPI_OPT_ENCRYPT, OMNIAPI_OPVAL_ANY) ; 1.12.4 "Omex Version"	
The OAPI program doesn't interpreted the "omex version", an internal reference used by HKEx, which will be returned by the following queries/transactions. • omniapi_get_info_ex (OMNI_INFTYP_OMEXVERSION) • uq12 (omex_version_s) • cq68 (omex version s)	
2. Mandatory Functions for Market Making and/or Trading program(s)	
2.1 Confirmation on own executed trades with the following information by both BO5 & BD6 Execute a trades and use BO5 and BD6 to check the trade number (on BD6 only), instrument series, price, quantity, order number and match ID for their executed trades under username level (preferable under customer level)	BO5: Series Name: (e.g. HSIM6, HSI20000F6) Price: Quantity: Order no.: (In 16-digit hexadecimal) Match ID: (In 16-digit hexadecimal) BD6: Series Name: (e.g. HSIM6, HSI20000F6) Price: Quantity: Order no.: (In 16-digit hexadecimal) Match ID: (In 16-digit hexadecimal) Match ID: (In 16-digit hexadecimal) Match ID: (In 16-digit hexadecimal) Trade po:

2.2 Price and Quantity Deviation	on										
2.2.1 Price Deviation											
Tester sets a limit on Price (e.g.	Tester sets a limit on Price (e.g. compare to last traded price or the bid										
/ask price) in any instrument serie	/ask price) in any instrument series. Then the tester places 2 orders										
which are higher and lower than	which are higher and lower than the limit in the instrument series										
respectively. The tester cannot in	respectively. The tester cannot input any order with price outside the										
price limit	price limit										
2.2.2 Quantity Deviation											
Tester sets a limit on Quantity for	r any instrument series. Then the	And the warning message for quantity									
tester places 2 orders which are	higher and lower than the limit in the	greater than the limit is:									
instrument series respectively. The	he tester cannot input any order with										
quantity greater than the limit											
2.3 Cross Modification											
2.4 The program can confirm o	outstanding orders after order										
deletion by others (e.g. exchan	ige) via (BO5/MQ8) (Maximum of 1										
MQ8 per second)											
2.5 Pre-Trade Risk Managemer	nt (PTRM) rejection message code										
verification											
2.5.1 Handle the message code	and text description after place Order										
(MO31), Quote (MO37/MO97) ar	nd/or Trade Report (MO75, MO76,										
MO77) are rejected by PTRM sys	stem										
Completion Status (i.e. csts)	Transaction Status (i.e. txstat)										
i) -12	-850002										
ii) -12	-850004										
) -12	-850006										
2.5.2 Handle BO5 broadcast after	r Mass Order Cancellation Function in										
PTRM system											
2.5.3 Handle the message code	and text description after Price										
Alteration (MO33 and/or MO/+M	(031) are rejected by PTRM system										

2.6 The program can identify post trade transactions (cleatransactions) from Trade Confirmation Message (BD6)	aring			
	*Filter	#Identify	N/A	
2.6.1 Pre-Opening Session (must complete all items)				
(not applicable if the OAPI program can't input Give Up order)				
2.6.1.1 Give Up (to CCCC) and take up Auction Order				
2.6.1.2 Give Up (to CCCC) and take up Limit Order				
2.6.2 Normal Trading Session (must complete all items)				
2.6.2.1 Split Trade				
2.6.2.2 Change Free text				
2.6.2.3 Change account				
2.6.2.4 Solely trade rectification				
2.6.2.5 Give Up to CCCC				
2626 Take Un				
2.6.2.7 Average Price Trade				
2.6.2.8 Transfer trade from DA/Default/Account				
2.6.2.0 Transier lidue iron DA(Derault)Account				
2.6.2.9 Cancellation of trade				
2.6.2.11 Position transfer				
* Filter: The OAPI program does not display the back office trade confirm # Identify: The OAPI program displays the back office trade confirmation above messages are back office messages, not trading messages	ation mess message	sage (BD6) to (BD6) to the u	the user ser and indic	ate to user that the
2.7 Market Making and/or Trading Program Participating I	in After-			
Hours Futures Trading (AHFT)	night if			
annlicable)	-mgm, n			
2.7.1 Confirmation of Orders, Trades and Price Informatic	on (BO5.			
CQ68, MO31, MQ8, BD6 & BD2) in T day (Tester could refer to	App B for			
the details of the test script)				
2.7.1.1 Enter orders in T session				
2.7.1.2 Execute the orders in T session and use BD6 to confin	rm the			
Clearing date of the trades	otor			
2.7.1.3 Trading State changes to AHT_INACT_T_ORDER, te	ster			
have been inactivated by system	JUEIS			
 2714 Trading State changes to AHT NEXT DAY tester sh	ould he			
able to identify the price and turnover information in BD2 is re	-set			
("Blank" for prices and "0" for turnover). Please note that the f	iaures in			
"Open Interest" will not be changed.	. <u>j</u>			
2.7.1.5 Trading State changes to AHT OPEN PL, tester exec	cutes			
orders and use CQ68 to retrieve the clearing date (Clearing d	late is			
next business day) and locate the trade number, instrument s	eries,			
price, quantity and order number in BD6.				
2.7.1.6 Trading State changes to AHT_OPEN_PL State, teste	er has to			
enter specific orders, execute orders and confirm the trade de	etails.			

	2.7.1.7 Query trades which will be cleared today and the next clearing	
	date:	
	Tester logouts the application and then Exchange will execute some	
	trades. Tester logins again and queries for trades cleared on today and	
	the next clearing date via CQ10 using the current clearing date and	
	next clearing date information in CQ68	
	2.7.1.8 After mid-night, the program can enter orders, execute orders	
	and confirm the trade details	
	(Not applicable for the OAPI program do not support trading beyond mid-	
	night)	
	2.7.2 Orders and Trades Confirmation (BO5, CQ68, MQ8, BD6) in	
	next business day (T+1 day)	
-	2721 On the next business day tester logins and can identify the	
	outstanding orders	
	2722 Program can confirm the details of those trades which are	
	executed in AHET session of the previous business day	
	2.8 Handling last trading time (ITT) during in After-Hours Eutures	
	<u>2.0 Handling last trading time (ETT) during in Alter-Hours Futures</u> Trading (ΔΗΕΤ)	
	2.8.1 Trade execution in the expiring snot series with last trading time	
	(LTT) during AHET sossion of a LME mini futuros	
	(LTT) duiling AFFT session, e.g., LIVE mini lutures	
	2.6.2 Order actions in the expiring spot series with last trading time	
	(LIT) during AHFT session, e.g., LIVE mini tutures	
	(* order change only applicable for system support MO33)	
	2.8.3 Verification of 'End of Trading' flag (optional)	
	3. Mandatory Functions for Market Making Program	
	(* MO96 only applicable to Exchange Participant granted with it) (All quotes for	
	market making are calculated by the program itself)	
	3.1 Send quotes with bid and ask orders with valid account type	
	(e.g. 'M1' or 'R123') for an instrument series and combo series and can	
	confirms the 16-digit hexadecimal order number after sending the	
	quotes	
	quotes By MO37	
	quotes By MO37 By MO96 *	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type By MO37	
	quotes By MO37 By MO96 * <u>3.2 Replace the quotes for instrument series and combo series</u> <u>with valid account type</u> By MO37 By MO96 *	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type By MO37 By MO96 * 3.3 Bulk and individual cancellation of quote(s)	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type By MO37 By MO96 * 3.3 Bulk and individual cancellation of quote(s) By MO4	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type By MO37 By MO96 * 3.3 Bulk and individual cancellation of quote(s) By MO4 By MO96 *	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type By MO37 By MO96 * 3.3 Bulk and individual cancellation of quote(s) By MO4 By MO96 *	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type By MO37 By MO96 * 3.3 Bulk and individual cancellation of quote(s) By MO4 By MO96 * 3.4 Identify the details of quote request for instrument series and TMC series	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type By MO37 By MO96 * 3.3 Bulk and individual cancellation of quote(s) By MO4 By MO96 * 3.4 Identify the details of quote request for instrument series and TMC series	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type By MO37 By MO96 * 3.3 Bulk and individual cancellation of quote(s) By MO4 By MO96 * 3.4 Identify the details of quote request for instrument series and TMC series 3.5 Can send out zero-bid quote for out-of-money series by exciding #0% as the bid and the series	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type By MO37 By MO96 * 3.3 Bulk and individual cancellation of quote(s) By MO4 By MO96 * 3.4 Identify the details of quote request for instrument series and TMC series 3.5 Can send out zero-bid quote for out-of-money series by providing "0" as the bid quantity	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type By MO37 By MO96 * 3.3 Bulk and individual cancellation of quote(s) By MO4 By MO96 * 3.4 Identify the details of quote request for instrument series and TMC series 3.5 Can send out zero-bid quote for out-of-money series by providing "0" as the bid quantity By MO37	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type By MO37 By MO96 * 3.3 Bulk and individual cancellation of quote(s) By MO4 By MO96 * 3.4 Identify the details of quote request for instrument series and TMC series 3.5 Can send out zero-bid quote for out-of-money series by providing "0" as the bid quantity By MO37 By MO96 *	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type By MO37 By MO96 * 3.3 Bulk and individual cancellation of quote(s) By MO4 By MO96 * 3.4 Identify the details of quote request for instrument series and TMC series 3.5 Can send out zero-bid quote for out-of-money series by providing "0" as the bid quantity By MO37 By MO36 * 3.6 Handling real-time addition of instrument series (for MO37 and	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type By MO37 By MO96 * 3.3 Bulk and individual cancellation of quote(s) By MO4 By MO96 * 3.4 Identify the details of quote request for instrument series and TMC series 3.5 Can send out zero-bid quote for out-of-money series by providing "0" as the bid quantity By MO96 * 3.6 Handling real-time addition of instrument series (for MO37 and MO96 *	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type By MO37 By MO96 * 3.3 Bulk and individual cancellation of quote(s) By MO4 By MO96 * 3.4 Identify the details of quote request for instrument series and TMC series 3.5 Can send out zero-bid quote for out-of-money series by providing "0" as the bid quantity By MO37 By MO37 By MO96 * 3.6 Handling real-time addition of instrument series (for MO37 and MO96 and TMC series (for MO37 only) 3.6.1 Placement of MO37 and MO96* orders	
	quotes By MO37 By MO96 * 3.2 Replace the quotes for instrument series and combo series with valid account type By MO37 By MO96 * 3.3 Bulk and individual cancellation of quote(s) By MO4 By MO96 * 3.4 Identify the details of quote request for instrument series and TMC series 3.5 Can send out zero-bid quote for out-of-money series by providing "0" as the bid quantity By MO37 By MO37 By MO96 * 3.6 Handling real-time addition of instrument series (for MO37 and MO96 * 3.6 Handling real-time addition of instrument series (for MO37 and 3.6 Handling real-time addition of orders 3.6.1 Placement of MO37 and MO96* orders 3.6.2 Receive quote requests (MI4)	

	<u>3.7 Ma</u>	rket N	laking	Progra	am Par	ticipat	ing in .	After-H	lours	Futures	<u>s</u>					
	<u>Tradin</u>	<u>g (T+1</u>	sessi	<u>on)</u>												
	3.7.1 C	ouring '	'Open"	State,	tester	enters	quotes	with M	037 a	nd/or						
	3.7.2 A	fter the	e Tradi	ng Stat	te char	iged to	AHT_N	VEXT_	DAY, t	he						
	3.7.3 During AHT_OPEN State (AHFT session), the program can enter															
	By MO37 By MO96 *															
	3.7.4 During AHT_OPEN_PL State (AHFT session), the program can enter quotes By MO37															
	By MO	96 ^														
	3.7.5 A beyond	lfter mi I mid-r	d-nigh night)	t, the p	rogram	ı can eı	nter qu	otes (if	systen	n suppo	ort					
	By MO By MO	37 96 *														
	<u> </u>															
	A Mar			4: f	T	din a D			4							
	items)	datory	/ Func	tions t	orira		rogran	ı (mus	t comp	Diete al	1					
	4.1 Tes	ster us	es MO	31 tran	sactior	n to inp	ut rest	of orde	r with \	/alid						
	accour	it type	for exi	sting in	strume	nt serie	es and	TMC s	eries ir	n two						
	differer	nt parti	tions (e	e.g. HS	I ⊢utur	es and	Stock	Option	s) and	confirm	1					
		aigit n	exadeo	cimal or	der nu	mber a	fter pla	cing th	e orde	rs. For	d					
		enes, i A price		ieeus (Sinput	unee c		with po	silive, 4	zero an	u					
		ster us	es MO	4 to car	ncel th	e innut	ed ord	ers on	instrun	nent sei	ries					
	& TMC	series				c input			motrum		103					
	4.3 Ha	Indling	real-ti	me add	lition of	f instrui	nent se	eries a	nd TMC	C series	5					
	4.3.1	Place	ment o	of MO3	1 rest o	of day l	imit orc	ler								
	4.3.2	2 Detai	led ret	rieval o	fexecu	uted or	der by l	BO5 ar	nd BD6	5						
		_	_	_	_	_	_	_	_	_					_	_
	5. Fun	ctions	for P	rice Fe	ed Pro	ogram	(OAPI	orograi	n musi	t suppo	rt					
_	5 1 Ma	rkot D	ata fu	nction	iction).											
	Market	t Data	Retrie	val for	existi	na and	newlv	addeo	l instri	ument						
	and TM	/IC sei	ies		•/•							Please	fill in the	box in l	eft-har	nd
	5.1.1 F	rice de	epth (IC	Q18 & E	3014)							side.				
	Tester	needs	to writ	e down	the pr	ice and	l quant	ity for t	hese s	eries						
	without	re-log	in of th	ne prog	ram:											
			Bid					Ask								
	5	4	3	2	1	1	2	3	4	5						

	5.1.2 Order depth (MQ7)					
	Tester needs to write dow	n the price and c	quantity fo	or these series		
	without re-login of the pro	gram:			Please fill in the	e box in left-hand
	Did Ordere	A als Orda]	side.	
	BOty Bid	Ask Order				
	Daty Dia	7.51	AQIy			
	5.1.3 Tester needs to con					
	execution	-				
	5.1.4 Tester needs to con	firm they can rec	eive BD7	1 after deal		
	cancellation and deal rect	ification and the	original B	D/U that has been		
	5 1 5 Subscribe market da	ata hy instrument	class / tv	(RO14)	The program allo	w only subscribe BO14
			. 010337 ty		on market(s):	
	5.2. Handling of trading	information for	the trade	ed series which		
	has the last trading time	(LTT) during A	HFT ses	sion on last		
	<u>trading day (LTD)</u>					
	5.2.1 Can the order and tr	ade information	be reflect	ed correctly during		
-	the AHFT session but bef	ore LTT of the sp	ot series	?		
	5.2.2 Can the order and the	ade information	in non-sp	ot-next series be		
	sories?	INE ARF I SESSION	n but atte	r L I I of the spot		
	361163 !					
	6. Change order (MO33)					
	After inputting MO31 limit	order, the progra	am can us	se MO33 to		
	6.1 decrease quantity (wil	l retain order pric	ority)			
	6.2 increase quantity (mag	y lose order prior	ity)			
	6.3 decrease limit price (n	nay lose order pr	iority) arity)			
	6.4 increase imit price (m	ay lose order pric	onty)			
	7. Create Tailor-Made Co	ombination (TM	C) series	for trading		
	7.1 Tester use DC2 to or	acto TMC corior	-,	and input		
	order in that new TMC in	same time (via	MO31/M	eys and input ()37)		
	7.1.1 Order/quotes sent			001)		
	7.1.2 Tester is able to ide	ntify the TMC and	d leg deta	ils (e.g. buy 1 lot of		
	HSI25000L4 and buy 2 lo	t of HSI25000X4)			
	7.2 Tester use DC3 to cr					
	order in that new TMC in	n same time (via	MO31/M	U37)		
	7.1.1 Oruer/quoles sent 7.1.2 Tester is able to ider	ntify the TMC and	d lea deta	ils		
	7.3 Tester use DC3 to ac	ld TMC series w	/ithout or	der or quote will		
	be rejected by the OAPI	program				
	8. Special Order Placem	ent				
	8.1 Input and alteration	of Auction Orde	r			
	8.2 Good Till Date Order					

8.3 Good Till Cancel Order		
8.4 Execution with FAK order		
8.5 Execution with FOK order		
8.6 Give-up Order		
8.7 Order Position (open/close)		
9. Trade Report		
9.1 T1 – Internal Trade Report (MO76)		
9.2 T2 – Combo Trade Report (MO77)		
9.3 T4 – Interbank Trade Report (MO75)		
9.3.1 MO74 – Unmatched Own T4 Trade Report Deletion		
9.3.2 MQ78-Query Unmatched Own T4 Trade Report		
9.3.3 MQ80 – Query T4 Trade Report waiting for matching from counterpart		
10. Stop Loss order		
10.1 will use last traded price from BD2 as reference?		
10.2 Can identify trade that will not update the last traded price?		
11. Get other user orderbook changes under the same customer		
(BO5)		
12. Issuing Quote Request (MC4) (Maximum of 1 Quote Request per second)		
13. Receiving Quote Request (MI4)		
14. Handling of the trading information for the traded series which include Opening Price, Day High Price, Day Low Price, Last Traded Price, Last Traded Quantity and Turnover (BD2)		
14. Handling of the trading information for the traded series which include Opening Price, Day High Price, Day Low Price, Last Traded Price, Last Traded Quantity and Turnover (BD2)14.1 For existing and newly added instrument series		
14. Handling of the trading information for the traded series which include Opening Price, Day High Price, Day Low Price, Last Traded Price, Last Traded Quantity and Turnover (BD2)14.1 For existing and newly added instrument series14.2 For existing and newly added TMC series		
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Program support below market	
A. Index Products (Index Futures and Options)	
B. Index Products (Flexible Index Options)	
C. Equity Products (Stock Futures)	
D. Equity Products (Stock Options)	
E. Currency Products	
F. Interest Rate and Fixed Income Products	
G. Commodities Products	

Appendix B

OMex Genium OAPI Certification Test Script (Version 1.4.1)

EP: Tester Name:		Login ID:
Program Name & version:		Library Used:
Developed by:	Test Date:	Test Time:
The program will connect via	Central Gateway	Network Gateway
Type of program:	Market Making	Trading Price Feed

Version number of Operating System used by the OAPI program: _____

Version	Date	Remark
1.0	31 Jan 2013	First Version
1.1	1 Jan 2014	Addition of test cases for Market Maker Protection and series update handling
1.2	3 Mar 2014	Addition of trading beyond mid-night
1.3	1 Apr 2014	Addition of Omex version checking
1.3.1	25 Sep 2014	Update product name for trading beyond mid-night
1.3.2	1 Sep 2015	Addition of Last Trading Time for London Metal Mini Futures
1.4	10 May 2016	Addition of handle rejection code by PTRM
1.4.1	11 Sep 2018	Layout Enhancements

Please note that this test script may be changed from time to time. During the certification test, Exchange staff will certify the mandatory items and all functions which the OAPI program supports. The mandatory items must be passed in order to pass the certification test. Please note that only certified items can be used in HKATS production environment. Tester must go through the test script in details before the certification test. Since the certification test takes quite long time to finish, the tester must familiar with the functionality and the operation of the OAPI program.

<u>Functionality</u>	Succ	essful
	Yes	<u>No</u>
1. Mandatory Functions for All Types of Program		
1.1.1 Program Name and version defined in the Program		
The program must define the program name and version (appl_ident_s in omni_login_t structure) for		
starting a session. Exchange will verify the program name and version after the tester login the testing		
account. The program name and version must not contain more than 18 characters		
1.1.2 Genium Library Verification		
The program is using Genium Library?		
1.2 Change of expired Login Password		
Exchange sets the password expired for testing account. When the tester logins the testing account,		
tester needs to change password		
1.3 Connection Status (must complete all items)		
1.3.1 Tester needs to logout the account and then login the account with 15 minutes' idle time. During		
the idle time, the login account must not be disconnected automatically		
1.3.2 In order to maintain heartbeat of connection with the host (i.e. login status on/off), the program		
must subscribe BI9 broadcast and poll it in regular manner. Exchange perform some actions for the		
login account and check the login status (i.e. on/off) with the tester		
1.3.3 Program / tester must have some controls to prevent 10 consecutive failed login attempts.		
Otherwise, the account will be locked (controlled by program/manual)		
1.3.4 Login request time interval of 1 minute. Program / tester cannot relogon within one minute after		
previous logout. (controlled by program/manual)		
1.3.5 Wait for at least 1 second after login before initiating the first transaction or query		
		D 1

Document Version Control

unctionality		essful
	Yes	No
1.3.6 Load test on series update – Exchange suspends or resumes 10 stocks underlying and the login account must not be disconnected / heartbeat automatically within 5 minutes		
1.3.7 When Exchange suspends or resumes 10 stocks underlying in item 1.3.6, the login account		
without Stock Ontions trading rights must not be disconnected / heartheat automatically within 5		
minutes		
1.4 Polling interval for any transactions which involve Read Events (Broadcast Messages)		
For any transactions (e.g. BD70/71, BD6) which involve Read Events (i.e. omniapi read event ext ex).	\Box	
the recommendation is to poll with time interval 250 milliseconds. The polling interval for the OAPI		
program is milliseconds		
1.5 Get the message code and text description for any transactions which provide completion		
status (i.e. cstatus) and / or transaction status (i.e. txstat)		
The OAPI program needs to get the message code for any transactions which provide the completion		
status (i.e. cstatus) and/or transaction status (i.e. txstat) and call the function		
omniapi_get_message_ex() during login state to obtain the text description for the above status.		
Exchange staff requests the tester to perform some transaction(s) and then check the message code		
and description with the tester		
<u>1.6 Normal Logout (use omniapi_logout_ex to logout the testing account)</u>		
After the tester logs out the testing account. The testing account must not have heartbeat disconnect		
after 3 minutes		
1 7 Pecaive Market Message (BI81) (must complete items 1 7 1 to 1 7 3)		
The Exchange sends the market message and confirms the following with the tester:		
1.7.1 message priority (message priority c) in text description		
1.7.2 message phony (message_phony_c) in text description 1.7.2 message subject (message_beader_s)		
1.7.3 message content (text_line_s)		
1.7.4 the market that receives the message (market code in series t) (ontional)		
1.8 Confirmation on real-time addition of instrument series and combo series (must complete all		
<u>items)</u>		
After the Exchange adds the instrument series and combo series with immediate effect, tester needs to		
perform the following with the Exchange without re-login the program:		
1.8.1 Confirmation on newly added instrument series by BU124 and TMC series by BU124 and BU126		
(Tester needs to confirm which instrument series (e.g. HSI25000L4) and combo series (e.g. HKB85.00X4/L4SY) have been added)		
1.8.2 Get the TMC definition of newly added series by BU126 and existing series by DU126		
- TMC with three legs		
- TMC with four legs		
(Tester needs to confirm whether buy/sell for each series when buying and selling for the added (by BU126) and existing combo series		
HKB85.00L4 and buy HKB85.00X4)		
1.8.3 Handling the delist of TMC series		
1.8.3.1 The Exchange will delist a TMC series and the tester can identify which TMC series is delisted.		
1.8.3.2 Handling of a new TMC series with the same combo definition as a delist TMC series. (After		
step 1.8.3, the Exchange will add a new TMC series with the same combo definition. Tester can		
identify the newly added TMC series and the combo definition.)		
1.9. Market Status (BI41 and DQ29)		
1.9.1 ATTER IOGIN HKAIS, CNECK THE MARKET STATUS (E.G. PREOPEN, PREOPENALLOC, OPENALLOC, PAUSE,		
PRE_MKI_ACI, OPEN_DPL, OPEN & CLOSE) IN some markets (e.g. MHI) which retrieved from DQ29 with		
III Clester		
1.9.2 Exchange will change the market status in some market(s) (e.g. MHI). Uneck the market status		
(C. Y PREOPEN, PREOPENALLOU, OPENALLOU, PAUSE, PRE_MKI_ACI, OPEN_DPL, OPEN & CLOSE) WINCI		D 2

Functionality	Succ	essful
	<u>Yes</u>	<u>No</u>
received from BI41 with the tester		
1.9.3 Tester can confirm the "Instrument session state" after the Exchange change it in instrument		
series level and underlying level	<u> </u>	
1 10 Get expiration date and last trading time of a series		
1.10 1 Check with tester the last trading date and time of a series and a combo series		
1.10.2 After the Exchange change the last trading date and the effective expiration date of an		
instrument series, tester needs to confirm which instruments have been changed and the undated last		
trading date and time and the new expiration date		
	+	
1.11 Resumption and Suspension of Trading (BI1 & BU124)		
Exchange will suspend contracts for trading and OAPI program should be able to handle it properly.		
1.11.1 Tester inputs orders/guotes on two contracts that is going to be suspended (for program		
that will input orders/quotes)		
1.11.2 Exchange will suspend one of the contract and tester should be able to identify which		
contract is suspended.		
1.11.3 Exchange will resume the suspended contract and tester should be able to identify which		
contract is resumed		
1.11.4 Exchange will suspend the product by underlying and all contracts based on this underlying		
will be suspended.		
1.11.5 Exchange will resume the product suspended in previous steps and tester should be able to		
identify the resumed contracts.		
<u>1.12 Handling of products with different features</u>	<u> </u>	
1.12.1 The program will utilize the currency information defined in Instrument Class level.		
1.12.1.1 Lester can identify the trading currency of the product (via the field "base_cur_s" field in		
DQ122)		
1.12.1.2 Tester can place and execute orders in products other than HKD, e.g. GLD and GNY		
1 12 2 The program will utilize the tick sizes information defined in Instrument Class Level		
Product with different tick size in stock options market had been set up (e.g. XAB, XBC & XCC)		
1 12 2 1 Tester can identify the tick size of an instrument class (via the field "dec, in premium n"		
field in DO122)		
1 12 2 2 Tester can identify the decimal place in the strike price of an instrument class (via the field		
"dec in strike price n" field in DQ122)		
1.12.2.3 Tester can place orders into the instrument class with different tick size and decimal place		
and confirm the order details which include the series strike price and order price		
(not applicable for Price Feed only program).		
1.12.3 The setting for Compression and encryption between OAPI Client and OMNet Gateway should		
be "ANY":		
- omniapi_set_option_ex(, OMNIAPI_OPT_COMPRESS, OMNIAPI_OPVAL_ANY);		
- omniapi_set_option_ex(, OMNIAPI_OPT_ENCRYPT, OMNIAPI_OPVAL_ANY) ;		
1.12.4 "Omex Version"		
The OAPI program doesn't interpreted the "omex version", an internal reference used by HKEx, that		
will be returned by the following queries/transactions.		
omniapi_get_into_ex (OMNI_INFTYP_OMEXVERSION)		
uq1∠ (omex_version_s)		
cupo (omex_version_s)		

Functionality	Succe	essful No
2. Mandatory Functions for Market Making and/or Trading Program(s) 2.1 Confirm own executed trades by both BO5 & BD6 (must complete all items)	100	
Tester inputs the following orders with *valid account type (i.e. ex_client_s). Then the Exchange executes some orders. Tester needs to use BO5 and BD6 to check the trade number (BD6 only), instrument series, price, quantity, order number and Match ID for their executed trades under username level (preferable under customer level)		
2.1.1 input more than 29 non-executed orders in the same instrument series		
2.1.2 input 1 order to execute more than 29 orders which are input by other users		
2.1.3 input several non-executed orders in different instrument series		
*valid account type : Non stock options - C/H/RXXX where XXX is the market maker trading account number, stock options – A1/P1/M1		
2.2 Price and Quantity Deviation (must complete all items)		
2.2.1 Price Deviation		
Request tester to set a limit on Price (e.g. compare to last traded price or the bid /ask price) in any instrument series. Then the tester places 2 orders with valid account type which are higher and lower than the limit in the instrument series respectively. The tester cannot input any order with price outside the price limit		
2.2.2 Quantity Deviation		
Request the tester to set a limit on Quantity for any instrument series. Then the tester places 2 orders with valid account type which are higher and lower than the limit in the instrument series respectively. The tester cannot input any order with quantity greater than the limit		
2.3 Cross Modification (must complete all items) 2.3.1 Order Executed during Alteration in Quantity		
 2.3.1.1 Change in Quantity (lost time priority scenario) Tester inputs a buy order with valid account type, quantity 10 and price 20,000 in any futures series Tester changes the quantity from 10 to 8 and the Exchange execute 9 lots (a) within the same second and (b) more than 1 seconds (9 lots executed, 1 lot remaining and the tester intends to change the order from 1 lot to 8 lots within the same second and more than 1 seconds after execution) 		
Results: (same second) (>1 second)		
Alert message is being generated (preferable)		
Remaining order, 1 lot is still in the market		
No remaining order		
Extra order has been placed after the modification (lots)		
 2.3.1.2 Change in Quantity (time priority remains unchanged) Tester inputs a buy order with valid account type, quantity 10 and price 20000 in any futures series Tester changes the quantity from 10 to 7 and the Exchange execute 2 lots (a) within same second and (b) more than 1 second (2 lots executed, 8 lots remaining and the tester intends to change the order from 8 lots to 7 lots) 		
Results (same second) (>1 second)		
Alert message is being generated (preferable)		
8 lots have been placed after modification or or		
7 lots have been placed after modification or or		
5 lots have been placed after modification		
Did not place new order after execution		

Functionality	Succe Ves	essful No
2 3 2 Order Executed during Cancellation	<u>100</u>	<u></u>
- Tester inputs 2 buy orders with valid account type, quantity 10 and price 20 000 in any futures		
series		
- Tester cancels the above orders and the Exchange executes whole or part of the order for each		
order within same second		
Results: Whole order Part of order		
Orders updated accordingly		
Alert message is being generated (preferred)		
2.4 Confirm outstanding orders after the Exchange deletes some order(s) (BO5/MQ8)		
After tester inputs several orders, the Exchange deletes some order(s). Tester need to confirm the		
outstanding order(s) with the Exchange		
2.5 Pre-Trade Risk Management (PTRM) rejection message code verification		
2.5.1 Handle the message code and text description after place Order (MO31), Quote		
(MO37/MO97) and/or Trade Report (MO75, MO76, MO77) are rejected by PTRM system		
Fuch some staff and former exciting a firme in DTDM sustains and as much the tester to ready and only		
Exchange start performs certain actions in PTRW system and requests the tester to perform Order		
(MOST), Quole (MOST/MOST) and/or Trade Report (MOTS, MOTO, MOTT) and then check the		
By MO31		
By MO37 and/or MO96 (optional)		
By MO75, MO76 and/or MO77 (optional)		
The OAPI program must be able to handle the 4 new return codes described below after the quotes are		
rejected by PTRM system and call the function omniapi_get_message_ex() during login state to obtain		
the text description for the new return codes		
a) Completion Status (i.e. csts) = -12 and Transaction Status (i.e. txstat) = -850002		
Text Description = "User is in a blocked pre trade risk state"		
b) Completion Status (i.e. csts) = -12 and Transaction Status (i.e. txstat) = -850004		
I ext Description = "User has breached order rate limit"		
c) Completion Status (i.e. csts) = -12 and Transaction Status (i.e. txstat) = -650006		
d) Completion Status (i.e. csts) = -12 and Transaction Status (i.e. txstat) = -850008		
Text Description = "User has exceeded max order size limit"		
* Screenshots for return messages (in PDF Format with clear indication to which step the screenshot		
belongs) are required		
2.5.2 Handle DOS breadeast offer Mass Order Consultation Function in DTDM suctors		
2.5.2 Handle BOS broadcast aller Mass Order Cancellation Function in PTRM system		
Cancellation Function and the OAPI should receive the corresponding ROS		

2.5.3 Handle the message code and text description afte MO4+MO31) are rejected by PTRM system	r Price Alteration (MO33 and/or	
Exchange staff performs certain actions in PTRM system MO33/ MO4+MO31 transaction(s) and then check the mess	<u>n and requests the tester to perform</u> age code and description with the tester	
By MO33 (optional) By MO4+MO31 (optional)		
a) Completion Status (i.e. csts) = -12 and Transaction Status Text Description = "User is in a blocked pre trade risk state"	s (i.e. txstat) = -850002	
Text Description = "User has breached order rate limit" c) Completion Status (i.e. csts) = -12 and Transaction Status Text Description = "User has breached an intraday exposure	s (i.e. txstat) = -850006 e limit"	
 d) Completion Status (i.e. csts) = -12 and Transaction Status Text Description = "User has exceeded max. order size limit 	s (i.e. txstat) = -850008 t"	
Note: Original order is kept in orderbook for price alteration v cancelled for price alteration with MO4 + MO31	with MO33 while the order is	
<u>2.6 Handling Additional Trade Confirmation Message (B</u> Tester executes some trades on bid and ask sides in different	D6) for clearing transactions nt instrument series. Tester needs to	
the Exchange performs the following clearing transactions:	e trade confirmation message (BD6) after	
2.6.1 Pre-Opening Session (must complete all items) (not applicable if the OAPI program can't input Give Up order)	<u>*Filter #Identify N/A</u>	
2.6.1.2 Give Up (to CCCC) and take up Limit Order		
2.6.2 Normal Trading Session (must complete all items) 2.6.2.1 Split Trade		
2.6.2.2 Change Free text 2.6.2.3 Change account		
2.5.2.4 Solely trade rectification		
2.6.2.5 Give Up to CCCC		
2.6.2.6 Take Up		
2.6.2.7 Average Price Trade		
2.6.2.8 Transfer trade from DA(Default)Account		
2.6.2.9 Cancellation of trade		
2.6.2.10 Position netting		
2.6.2.11 Position transfer		
* Filter: The OAPI program does not display the back office trade confirm # Identify: The OAPI program displays the back office trade confirmation that the above messages are back office messages, not trading messag	mation message (BD6) to the user n message (BD6) to the user and indicate to user es	

2.7 Market Making and/or Trading Program Participating in After-Hours Futures Trading (AHFT)	
(including Market Marking beyond mid-night, if applicable)	
2.7.1 Orders, Trades and Price Information Confirmation (BO5, CQ68, MO31, MQ8, BD6 & BD2)	
in T day	
 2.7.1.1 During Open State, tester enters the following orders: i. Buy LRA Futures (Price 10040, Quantity 1) with "exch_order_type_n" set to 0 ii. Buy LRA Futures (Price 10035, Quantity 1) with "exch_order_type_n" set to 2048 iii. Buy LRA Futures (Price 10030, Quantity 1) with "validity" set to day and "exch_order_type_n" set to 0 	
 iv. Buy LRA Futures (Price 10025, Quantity 1) with "validity" set to good-till-cancel and "exch_order_type_n" set to 0 v. Buy LRA Futures (Price 10010, Quantity 1) with "validity" set to day and "exch_order_type_n" 	
set to 2048 vi. Buy LRA Futures (Price 10020, Quantity 1) with "validity" set to day and "exch order type n"	
set to 2048 vii. Buy LRA Futures (Price 10005, Quantity 1) with "validity" set to good-till-cancel and	
viii. Buy LRA Futures (Price 10015, Quantity 1) with "validity" set to good-till-cancel and "exch_order_type_n" set to 2048	
2.7.1.2 The Exchange executes the orders in i and ii. Then, tester use BD6 to confirm the clearing date of the trades.	
2.7.1.3 The Exchange changes the Trading State to AHT_INACT_T_ORDER, tester much be able to identify orders in v, vi, vii, and viii are active while orders in iii and iv are inactivated.	
2.7.1.4 The Exchange changes the Trading State to AHT_NEXT_DAY, tester should be able to identify the price and turnover information in BD2 is re-set ("Blank" for prices and "0" for turnover). Please note that the figures in "Open Interest" will not be changed.	
2.7.1.5 The Exchange changes the Trading State of HHI market to AHT_OPEN_PL, and then, executes orders in vi and viii . Tester use BD6 to confirm the clearing date of the trades.	
 2.7.1.6 During AHT_OPEN_PL State (AHFT), tester enters the following orders: xi. Buy LRA Futures (Price 10155, Quantity 1) with "validity" set to day and "exch_order_type_n" set to 2048 xii. Buy LRA Futures (Price 10165, Quantity 1) with "validity" set to day and "exch_order_type_n" 	
set to 2048 xiii. Buy LRA Futures (Price 10160, Quantity 1) with "validity" set to good-till-cancel and "exch_order_type_n" set to 2048	
xiv. Buy LRA Futures (Price 10170, Quantity 1) with "validity" set to good-till-cancel and "exch_order_type_n" set to 2048 The Exchange executes the orders in xii and xiv. Then, tester use BD6 to confirm the trade	
details.	
2.7.1.7 Query trades that will be cleared today and next clearing date: Tester logouts the application and then Exchange will execution some trades. Tester logins again and query for trades cleared on today and next clearing date via CQ10 by using the current clearing date and next clearing date information in CQ68	

2.7.1.9. After mid night tester have to enter energine orders, evenute orders and confirm the trade		
2.7.1.6 After mid-night, tester have to enter specific orders, execute orders and confirm the trade		
details. (If system support beyond mid-night)		
xv. Buy LRA Futures (Price 101/5, Quantity 1) with "validity" set to day and "exch_order_type_n"		
set to 2048		
xvi. Buy LRA Futures (Price 10185, Quantity 1) with "validity" set to day and "exch_order_type_n"		
set to 2048		
xvii, Buy LRA Futures (Price 10180, Quantity 1) with "validity" set to good-till-cancel and		
"exch order type n" set to 2048		
The Exchange executes the orders in vui. Then tester use BD6 to confirm the trade details		
(Net emplicable for the OAD) areasen do not even orthrodian beyond mid night)		
(Not applicable for the OAPI program do not support trading beyond mid-hight)		
2.7.2 Orders and Trades Confirmation (PO5_CO69_MO9.8 PD6) in part husiness day (T+1 day)		
$\frac{2.7.2}{2}$ Orders and Trades Committation (DOJ, CQ00, MQ0 & DD0) in next business day (1+1 day)		
2.7.2.1 Tester logins to the testing environment and confirm the outstanding orders' details (orders		
in iv, vii, xiii and xvii).		
2722 Tester confirms the trade details of the trades from orders in vi viii xii xiv xv and xvi		
/trades from AHET session of previous business day)		
(liddes from Arr 1 session of previous business day)		
2.8 Handling last trading time (LTT) during in After-Hours Futures Trading (AHFT) session		
2.8.1 Trade execution in the expiring spot series with last trading time (LTT) during AHFT		
session, e.g., LME mini futures		
2.8.1.1 Tester executes trades in the expiring <u>spot</u> series in T session. Trades on 2 classes with		
different LTT are required, i.e., 1 trade in each class.		
2.8.1.2 Tester executes trades in the expiring spot series in AHFT session but before the LTT.		
Trades on 2 classes with different LTT are required i.e. 1 trade in each class		
2.8.1.3 Tester executes trades in the spot-next series in AHET session after the LTT of spot		
2.0.1.3 Testel executes trades in the <u>spot-next</u> series in Arit 1 session after the LTT of spot		
2.8.2 Order actions in the expiring spot series with last trading time (LTT) during AHFT session,		
e.g., LME mini futures		
(* order change only applicable for system support MO33)		
2.8.2.1 In T session, Tester places at least 6 buy/ sell orders with T+1 flag in the expiring spot		
series (including relevant combo series), and cancel 1 of those orders subsequently.		
2 8 2 2 Change 1 of those orders (only applicable for system support MO33)		
2.8.2.3 In AHET session (before LTT). Tester cancels 1 of those orders placed in item 2.8.2.1		
2.8.2.4 In AHET session (before LTT). Tester places 1 new order and cancels it immediately		
2.0.2.4 III ATTI T Session (before LTT), Tester places They order and cancels it infine dately.		
2.6.2.5 IN AFFT Session (before LTT), Tester changes T of those orders placed in item 2.6.2.1		
$(MO33^{\circ})$.		
2.8.2.6 In AHFT session (before LTT), Tester places 1 new order and changes it immediately		
(MO33*).		
2.8.2.7 In AHFT session (after LTT), Tester cancels 1 of those orders placed in item 2.8.2.1 and got		
rejected.		
2 8 2 7 In AHET session (after LTT) Tester places 1 new order and got rejected		
2.8.2.8 In AHET session (after LTT). Tester places 1 new order in the spot-next series and cancels		
it immediately		
1. Infinite dialety.		
2.0.2.3 III AFITI SESSION (alter LTT), TESTER Changes TOT THOSE ORDERS placed IN Item 2.8.2.1 and		
2.8.2.10 In AHFT session (after LTT), Tester places 1 new order in the spot-next series and		
changes it immediately (MO33*).		
2.8.3 Verification of 'End of Trading' flag (optional)		
2.8.3.1 Verify the 'End of Trading' flag is not with T session close (i.e. CLOSE TODAY E) and		
have no impact.		<u> </u>
	1	

2.8.3.2 Verify the 'End of Trading' flag is with the AHFT close (i.e. AHT_CLOSE_E) and can serve as the signal of day close as required by the OAPI Program.	
3. Mandatory Functions for Market Making Program (* MO96 only applicable to Exchange Participant granted with it) (All quotes for market making are calculated by the program itself)	
<u>3.1 Send quotes with bid and ask orders</u> with valid account type (e.g. 'M1' or 'R123') for a newly created instrument series and combo series and confirms the 16-digit hexadecimal order number after sending the quotes By MO37 By MO96*	
3.2 Replace the quotes for instrument series and combo series with valid account type By MO37 By MO96*	
3.3 Bulk and individual cancellation of quote(s) By MO4 By MO96*	
3.4 Identify the details of quote request for instrument series and TMC series After the Exchange sends the quote request for one of the instrument series and TMC series, tester needs to confirm which series have the quote request	
<u>3.5 Send out zero-bid quote for out-of-money series by providing "0" as the bid quantity</u> By MO37 By MO96*	
3.6 Handling real-time addition of instrument series and TMC series After the Exchange adds the instrument series and TMC series with immediate effect, tester needs to perform the following for the newly added instrument series and TMC series without re-login the program:	
 3.6.1 Tester input "rest of day" order with valid account type By MO37 By MO96* (instrument series only) 3.6.2 After the Exchange sends the quote request. Tester needs to confirm which instrument series and TMC series have the quote request 	
3.6.3 After the tester execute a trade, tester needs to confirm the executed trade with the instrument series, price, quantity and 16-digit hexadecimal order number from BO5 and BD6 (also confirms the trade number)	
3.7. Mandatory Functions for Market Making Program Participating in After-Hours Futures Trading (AHFT) (including Market Marking beyond mid-night, if applicable)	
3.7.1 During Open State, tester enters quotes with MO37 and/or MO96	
3.7.2 The Exchange changes the Trading State to AHT_NEXT_DAY, tester should be able to identify quotes are removed by HKATS	
3.7.3 During AHT_OPEN State (AHFT session), tester enters quotes with MO37 and/or MO96	
3.7.4 During AH1_OPEN_PL State (AHF1 session), tester enters quotes with MO3/ and/or MO96	
3.7.5 After mid-night, tester enters quotes with MO37 and/or MO96 (if system support beyond mid- night)	
4. Mandatory Functions for Trading Program (must complete all items)	
4.1 Lester uses MO31 transaction to input rest of order with valid account type for existing instrument series and TMC series in two different partitions (e.g. HSI Futures and Stock Options) and confirm the 16-digit hexadecimal order number after placing the orders. For TMC series, tester needs to input three orders with positive, zero and negative price respectively	

4.2 Tester uses MO4 to cancel the inputted orders on instrument series & TMC series	
4.3 Handling real-time addition of instrument series and TMC series	
After the Exchange adds the instrument series and TMC series with immediate effect, tester needs to	
perform the following for the newly added instrument series and TMC series without re-login the	
program:	
4.3.1 Tester uses MO31 transaction to input rest of order with valid account type. For TMC series,	
tester needs to input three orders with positive, zero and negative price respectively	
4.3.2 After the tester execute a trade, tester needs to confirm the executed trade with the instrument	
series, price, quantity and 16-digit hexadecimal order number from BO5 and BD6 (also	
confirms the trade number)	
5. Mandatory Functions for Price Feed or View-Only Program (Must support at least one of the	
following functions):	
5.1 Market Data function	
Market Data Retrieval for existing and newly added instrument and TMC series	
After the Exchange adds instrument series and TMC series with immediate effect in two different	
partitions (e.g. HSI Futures and Stock Options) and inputs some quotes for the above mentioned	
series, tester needs to confirm the price and quantity for these series without re-login the program:	
5.1.1 Price depth (IQ18 & BO14)	
5.1.2 Order depth (MQ7) (Maximum of 1 MQ7 per second)	
5.1.3 Tester need to confirm they can receive BD70 after deal execution	
5.1.4 Tester need to confirm they can receive BD71 after deal cancellation and deal rectification	
and the original BD70 that has been cancelled	
5.1.5 Subscribe market data by instrument class / type (BO14)	
Request tester to set market data subscription in any instrument class/type. Then Exchange	
sends the market data to see if tester can get the data.	
\mathbf{v}	
5.2 Handling of trading information for the traded series which has the last trading time (LTT)	
5.2 Handling of trading information for the traded series which has the last trading time (LTT) during AHFT session on last trading day (LTD)	
5.2 Handling of trading information for the traded series which has the last trading time (LTT) during AHFT session on last trading day (LTD) Read order information of any order action on the same participant:	
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 5.2 Handling of trading information for the traded series which has the last trading time (LTT) during AHFT session on last trading day (LTD) Read order information of any order action on the same participant: 5.3.1 Can the order and trade information be reflected correctly during the AHFT session but before LTT of the spot series? 5.3.2 Can the order and trade information in non-spot-next series be reflected correctly during the AHFT session but after LTT of the spot series? 6. Change order (MO33) After tester inputs MO31 limit order, tester needs to use MO33 to 6.1 decrease quantity (will retain order priority) 6.2 increase quantity (may lose order priority) 6.4 increase limit price (may lose order priority) 	
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8. Special Order Placement	
8.1 Input and alteration of Auction Order (must complete 1 and 2)	
8.1.1 Pre-Market Activities	
Tester inputs the following MO31 orders during Pre-Opening with any valid account type (e.g. 'C'), valid	
order position (optional) (i.e. open close reg $c = 1$ for open position, open close reg $c = 2$ for close	
position) on spot futures)	
8 1 1 1 Buy 7 lots of Auction order (AO) with close position (Give Up to HKCGA1 (i e	
give up member) if applicable)	
8 1 1 2 Change the quantity of above AO order from 7 to 3	
8 1 1 3 Change the quantity of above AO order from 3 to 5	
8 1 1 4 Sell 7 lots of ΔΩ with onen position	
8 1 1 5 Cancel the above ΔO order with 7 lots	
8 1 1 6 Sell 10 lots of AO with open position	
8.1.1.7 Soll 10 lots of Limit order (LO) @ 23200 with open position (Good Till Date order if	
applicable, etherwise rest of day order, tester peeds to confirm the 16 digit bevadesimal	
applicable, otherwise rest of day order, tester needs to commit the To-digit nexadecimal order number for good till date order) (Cive Up to HKCCA1 (i.e. give, up, member) if	
applicable)	
8.1.1.8 Change the price to 23300 and quantity to 5 lots for the above order	
8.1.1.9 Buy 3 lots of LO @ 23200 with close position (Good Till Cancel order it applicable,	
otherwise rest of day order, tester needs to confirm the 16-digit hexadecimal order number	
for good till cancel order)	
8.1.1.10 Change the price to 23300 and quantity to 1 lot for the above order	
Check with outstanding order details	
Exchange change the market status to Pre-Opening Allocation (POA):	
Please note that tester can input auction order only during this market status	
Exchange change the market status to Open-Allocation (OPA):	
Please note that tester cannot perform any order actions during this market status	
Exchange change the market status to Pause (PAU):	
During this period, orders will be matched. Confirm traded details in BD6 with the tester	
a. Executed Instrument	
b. Trade number	
c. 16-digital hexadecimal order number	
d. Traded Price and quantity	
e. Give up account (if applicable)	
f. Order position (if applicable)	
Check with executed details and outstanding order details	
Change the market to Open session	
8.1.2 BO5 (AO conversion) during Pre-market	
8.1.2.1 Tester places AO with any valid account type on both Bid and Ask sides in any MHI	
Futures during Pre-Opening and confirms the 16-digit hexadecimal order number after	
placing the orders	
8 1 2 2 Place I O on Bid side by the Exchange during Pre-Opening	
8 1 2 3 Change market session to POA OPA PAU by the Exchange	
8 1 2 4 Verify details of outstanding orders	
(Ask AQ removed and Bid AQ converted to LQ)	
9.2 Cood Till Date (Need to be tested if 9.1.1.7 does not test need fill date ander)	
0.2 GOOD THE Date (Need to be tested if 0.1.1.7 does not test good till date order)	
16 digit bevedesimal order number ofter plasing the order	
8.3 GOOD THE CANCEL (Need to be tested if 8.1.1.9 does not test good till cancel order)	

Tester inputs a good till cancel order with valid account type for any instrument series and confirms the		
8 3 Good Till Cancel (Need to be tested if 8 1 1 9 does not test good till cancel order)		
Tester inputs a good till cancel order with valid account type for any instrument series and confirms the		
16-digit hexadecimal order number after placing the order		
8.4 Execution with FAK		
Tester inputs a fill and kill order (FAK) with valid account type to execute one existing order and		
confirms the 16-digit hexadecimal order number after the execution		
8.5 Execution with FOK		
Tester inputs a fill or kill order (FOK) with valid account type to execute one existing order with FOK		
order quantity greater than the existing order. (No order should be executed)		
8.6 Give-Up Order (Need to be tested if 8.1.1.7 does not test Give-up order)		
Tester inputs a Give-Up Order to HKCGA1 with valid account type for any instrument series and		
confirms the 16-digit hexadecimal order number after placing the order.		
8.7 Order Position (open/ close) (Need to be tested if 8.1.1.7 & 8.1.1.9 do not test order position)		
Tester inputs two orders (one is open position and the other is close position) with valid account type		
for any instrument series		
0. Trada Banaré		
9. Trade Report		
<u>9.1 11 – Internal Trade Report (MO70)</u>		
rester sends several trade report series with valid account type in any Options series with non-blank		
16 digit bevedesiged order number offer conding the shows order		
9 2 T2 – Combo Trade Report (MO77) (Maximum 6 legs - under same partition only)		
Tester sends a combo series trade report with valid account type with 2 leas in any Ontions series with		
non-blank information in the information field and Give Up to HKCGA1 if applicable. Tester needs to		
confirm the 16-digit hexadecimal order number after sending the above order and the resulting trade		
details from BO5 and BO6		
9.3 T4 – Interbank Trade Report (MO75)		
Tester sends a Buy interbank trade report with valid account type to company HKCCC in any Options		
series with non-blank information in the information field and Give Up to HKCGA1 if applicable. Tester		
needs to confirm the 16-digit hexadecimal order number after sending the above order		
9.3.1 MO/4-Unmatched Own 14 Trade Report Deletion (Optional)		
After tester sends a 14 trade report, tester needs to delete the above order		
9 3 2 M078-Query Unmatched Own T4 Trade Report (Ontional)		
After tester sends several T4 trade reports some T4 trade reports are executed by the Exchange		
Tester needs to tell the Exchange for unmatched own T4 trade reports are exceeded by the Exchange.		
9.3.3 MQ80-Query T4 Trade Report waiting for matching from counterpart (Optional)		
Exchange will issue a T4 trade reports to tester for matching. Tester need to confirm the details of the		
trade report and match the trade report by sending out MO75		
10. Stop Loss (Use BD2 - Last Price as a stop loss reference price) (must complete 10.1)	<u> </u>	
10.1 Support in Open Session		
10.1.1 Normal Trade which update the last traded price (must complete all items)		
10.1.1.1 Lester sets a stop loss instruction - to place a buy order (e.g. price 20100 with quantity 5)		
with valid account type automatically if the last traded price in HSI spot futures is greater		

than the stop loss reference price (e.g. 20000) 10.1.1.2 Execute a trade (e.g. 19900) by the Exchange in HSI spot futures with last traded price lower than the stop loss reference price. The program must not place any buy order (e.g.	
price 20100 with quantity 5) automatically	
10.1.1.3 Exchange place one bid or ask order for HSI spot futures with the price (e.g. 20100) greater than the stop loss reference price. The program must not place any buy order	
automatically 10.1.1.4. Execute a trade (a.g. 20100) by the Exchange in HSI and futures with last traded price	
areater than the stop loss reference price. The program must place a buy order (e.g. price	
20100 with quantity 5) automatically. Tester needs to confirm the 16-digit hexadecimal	
order number after sending the above order	
10.1.2 Trades which do not update the last traded price (must complete all items)	
As there are trades (e.g. Combo versus Combo Tradeand Trade Report) which do not update the	
last traded price for the executed outright series, the OAPI program must not place a stop loss order for the above trades.	
10.1.2.1 Tester sets a stop loss instruction - to place a sell order (e.g. price 19900 with quantity 5)	
with valid account type automatically if the last traded price in HSI spot futures equals to	
10.1.2.2 Execute a Combo versus Combo Trade or Trade Report in HSI spot futures by the	
Exchange with the traded price in HSI spot futures equals to the stop loss reference price	
(e.g. 20000). The program must not place any sell order (e.g. price 19900 with quantity 5)	
automatically	
10.1.2.3 Execute a trade (e.g. 20000) by the Exchange in HSI spot futures with last traded price	
equals to the stop loss reference price. The program must place a sell order (e.g. price	
order number after sending the above order	
10.2 Support in Pre-market Session (if applicable) (must complete all items)	
10.2.1 Tester sets a stop loss instruction - to place a sell order (e.g. price 19900 with quantity 5)	
with valid account type automatically if the last traded price for HSI spot futures equals or lower than the stop loss reference price (e.g. 20000)	
10.2.2 During Pre-Opening, tester inputs (i) one bid and ask auction orders with 5 lots (ii) one bid	
and ask limit orders with 5 lots and the price equals to the stop loss reference price (e.g.	
20000)	
10.2.3 Exchange changes the market status to POA, OPA and PAOSE in HSI lutures market. The	
10.2.4 Exchange changes the market status to OPEN for HSI market. The program must place a	
sell order (e.g. price 19900 with quantity 5) automatically. Tester needs to confirm the 16-	
digit hexadecimal order number after sending the above order	
11. Get other user orderbook changes under the same customer (BO5)	
Exchange logins with an account of the same customer. Then the Exchange performs some order	
actions (e.g. place, change, delete order etc). Confirm what order actions the Exchange have performed	
12. Issuing Quote Request (MC4)	
12.1 Tester needs to send quote requests with any volume (Maximum of 1 Quote Request per second)	
for the newly added instrument series and TMC series without re-login the program	

13. Receiving Quote Request (MI4)				
After the Exchange sends the quote request for an newly added instrument series and TMC series,				
tester needs to confirm which series have the quote request				
14. Handling of the trading information for the traded series which include Opening Price, Day High Price, Day Low Price, Last Traded Price, Last Traded Quantity and Turnover) (BD2) After the Exchange execute some trades on newly added series, tester needs to confirm the trading information for the selected series which include Opening Price, Day High Price, Day Low Price, Last Traded Price, Last Traded Quantity and Turnover				
14.1 For newly added instrument series				
14.2 For newly added TMC series (include zero, positive and negative price)				
15. Market Maker Protection for Market Makers Providing Continuous Quotes (*Market Maker Protection only applicable to Exchange Participant granted with it)				
15.1 Tester can retrieve the parameters setting via query (DQ87)				
15.2 The Exchange changes one of the MMP setting and the tester can identify the changes via				
broadcast (BU87)				
15.3 Tester can use transaction to change the "Quantity Protection quantity", "Delta Protection				
quantity", "Exposure Limit Time Interval" and "Quotation Frozen time" (DC87)				
15.4 Tester place quotes with MO37/MO96 for 120 series each with 30 lots on both sizes. When				
Exchange executes the quotes with equal or exceed the protection amount, the remaining quotes will				
be removed automatically. The tested OAPI program will not be logout automatically and able to				
Identify which underlying has MMP triggered (handling of BO5 and BO38).				
15.5 During the "Quotation Frozen time" period, tester tries to issue quotes and the quotes will be				
rejected by HKATS	L			
15.6 During the "Quotation Frozen Time" period, tester tries to issue limit order via MO31 and the				
order can be successfully issued (optional for MM program that will use MO31 only)				
15.7 During the "Quotation Frozen Time" period, tester reset the MMP setting again (without				
changes the parameter) and then issue quotes (MO37/MO96).				
15.8 Tester place quotes with MO37/MO96 for 120 series each with 30 lots on both sizes on the three				
classes. The Exchange executes the quotes with equal or exceeds the protection amount for all the				
three classes. The tested OAPI program will not be logout automatically and able to identify which				
underlying has MMP triggered (handling of more than one MMP triggering).				

Results of OMex Genium Certification Test (Ver. 1.4.1)

Exchange Participant	:						
Contact Person	:						
Tel	:		F	ax:			
E-Mail	:						
Program Name &Versio	n:						-
Developed by	:						-
Exchange Library Used	:						-
Test Date	:						-
The Program will conne	ct to HI	KATS through:	□Centr	al Ga	teway		k Gateway
Type of program:		Market Making Trading Price Feed					
Market data source:	This (HKA Orion Infori	OAPI program supp TS NG by other OA Market Data Platfo mation Service Venc	ort Pric PI prog rm – D lor:	e Fee gram erivat	d functio	ons rket (OME)-D)
Program can support tra-	ding be	yond mid-night:		Yes		No	
Version number of Oper	ating S	ystem used by the O	API pro	ogran	n:		
Please indicate the results of	the OAI	PI certification test by p	utting a '	" √ " in	the appro	priate boxes	5.
<u>Functionality</u>			Comp	oleted	Not Applicabl	e R	emark
1. Basic Functions for all types of	program		+	7			
1.1.1 Program and version define		logialli		<u>ן</u> ק			
1.1.2 Change of expired Login Pas	sword			<u>ן</u> ר			
1.2 Change of explice Logill I as	5 WOLU			-		1	

1.3 Connection Status

Functionality	Completed	Not Applicable	Remark
Broadcast and poll it in regular interval		Applicable	
1.3.3 Restriction on re-login after 10 or more consecutive login			
failure attempts			
1.3.4 Login request time interval for 1 minute			
1.3.5 Wait for at least 1 second after login, before initiating the first			
1.2.6 Load test on series undete			
1.3.0 Load lest off series update			
resumes 10 stocks underlying			
1.4 Polling interval for any transactions which involve Read Events			
(Broadcast Messages) - polling interval is milliseconds			
which provide completion and /or transaction status			
1.6 Normal Logout			
1.7 Receive Market Message (BI81)			
1.7.1 Message priority			
1.7.2 Message subject			
1.7.3 Message content			
1.7.4 Market / Market code (optional)			
1.8 Confirmation on real-time addition of instrument series and TMC			
series			
TMC series by BU124 and BU126			
1.8.2 Get the TMC definition of newly added series by BU126 and existing series by DO126.			
1.8.3 Handling of delist of TMC series			
1.9 Market Status (BI41 & DO29)			
1.10 Get expiration date and last trading time of a series			
1.11 Resumption and suspension of Trading	П		
1.12 Other best programming practices: utilize instrument class level			
interpret the Omex version			
· · ·			
2. Core Functions for Market Making and/or Trading Program(s)			
2.1 Confirm own executed trades with the following information by			
BO5 & BD6			
2.1.1 Trade number (BD6 only)			
2.1.2 Instrument Series			
2.1.3 Premium & Quantity			
2.1.4 Order number			
2.1.5 Match ID			
2.2 Price and Quantity Deviation			
2.3 Cross Modification			
2.3.1 Order Execution during Alternation in Quantity			
2.3.1.1 Alert message			
2.3.1.2 Orders updated accordingly			
2.3.2 Order Execution during Cancellation			
2.3.2.1 Alert message			
2.3.2.2 Orders updated accordingly			
2.4 Confirm outstanding orders after the Exchange deletes some			

Functionality	Completed	Not Applicable	Remark
order(s) (BO5/MQ8)		••	
2.5 Pre-Trade Risk Management (PTRM) rejection message code			
verification			
2.6 Handling Additional Trade Confirmation Message (BD6) for			
2.6.1 Pre-Opening Session (For program with Give Up order			
functionality only)			
2.6.1.1 Give Up(to CCCC) and take up Auction Order			
2.6.1.2 Give Up (to CCCC) and take up Limit Order			
2.6.2 Normal Trading Session			
2.6.2.1 Split trade			
2.6.2.7 Spin trade			
2.6.2.2 Change account			
2.0.2.5 Change account			
2.6.2.5 Give Up to CCCC			
2.6.2.6 Take Up			
2.6.2.7 Average Price Trade			
2.6.2.8 Transfer trade from DA a/c			
2.6.2.9 Cancellation of trade			
2.6.2.10 Position Netting			
2.6.2.11 Position Transfer			
2.7 Market Making and/or Trading Program Participating in After-Hours Futures Trading (AHET) (including trading beyond mid-night)			
2.7.1 Orders, Trades and Price Information Confirmation (BO5, CQ68,			
MO31, MQ8, BD6 & BD2) in T day			
2.7.2 Orders and Trades Confirmation (BO5, CQ68, MQ8 & BD6) in T	п		
+1 Day			
2.8 Handling last trading time (LTT) during in After-Hours Futures Trading (AHFT)			
2.8.1 Trade execution in expiring spot series with last trading time during AHFT session			
2.8.2 Order actions in expiring spot series with last trading time during AHFT session			
2.8.3 Verification of 'End of Trading' flag			
3. Core Functions for Market Making Program (All quotes for market making are calculated by the program itself)			
3.1 Send quotes for instrument series and TMC series by MO37 and / or MO96 (with account type field specified)			
3.2 Replace quotes (with account type field specified) by: MO37 (for instrument series and TMC series) MO96 (for instrument series only)			
3 3 Bulk and individual cancellation of quote(s) by			
MO4 (for instrument series and TMC series)			
MO96 (for instrument series only)			
s.4 Receive Quote Request for existing instrument series and TMC series by MI4			
3.5 Send out zero-bid quote for out-of-money series	_	_	
M037 M006			
 3.6 Handling real-time addition of instrument series and TMC series 3.6.1 Placement of quotes by MO37 / MO96 3.6.2 Receive quote request (MI4) 3.6.3 Detailed retrieval of executed order by BO5 and BD6 			

Functionality	Completed	Not Applicable	Remark
3.7 Core Functions for Market Making Program Participating in After- Hours Futures Trading (AHFT) (including trading beyond mid-night)			
3.7.1 Enter quotes with MO37/MO96 in OPEN State			
3.7.2 Handle quotes removed by HKATS before AHFT session			
3.7.3 Enter quotes with MO37/MO96 in AHT_OPEN State			
3.7.4 Enter quotes with MO37/MO96 in AHT_OPEN_PL_State			
3.7.5 After mid-night tester enters quotes with MO37 / MO96			
4. Core Functions for Trading Program			
4.1 Input rest of day for existing instrument series and TMC series by MO31 (with account type field specified)			
4.2 Cancellation of orders on existing instrument series and TMC series			
4.3 Handling real-time addition of instrument series and TMC series 4.3.1 Placement of MO31 rest of day order			
4.3.2 Detailed retrieval of executed order by BO3 and BD6			
5. Come Examples and Decomposition			
5. Core Functions for Price Feed Program			
Market Data function Market Price Retrieval for existing and newly added instrument series and TMC series			
5.1.1 Price Depth (IQ18 and BO14)			
5.1.2 Order Depth (MQ7- Maximum of 1 MQ7 per second)			
5.1.3 Ticker (BD70)			
5.1.4 Ticker amendment (BD71)			
5.1.5 Subscribe market data by instrument class/type (BO14)			
5.2 Order and trade information before and after the last trading time			
6 Change order (MO33)			
7 Create and trade Tailor-Made Combination(DC3)			
7.1 & 7.2 Create TMC together with order/quote input			
7.3 Reject TMC creation if no order/quote input			
8. Special Order Placement (with account type field specified)			
8.1 Input and alteration of Auction Order			
8.2 Good Till Date			
8.3 Good Till Cancel			
8.4 Execution with FAK			
8.5 Execution with FOK			
8.6 Give-Up Order			
8.7 Order Position (open / close)			
9. Trade Report			
9.1 T1 - Internal Trade Report (MO76)			
9.2 T2 - Combo Trade Report (MO77)			
9.3 T4 - Interbank Trade Report (MO75)			
9.3.1 Unmatched Own T4 Trade Report Deletion (MO74)			
9.3.2 Query Unmatched Own T4 Trade Report (MQ78)			
9.3.3 Query Unmatched T4 Trade Report as counterparty (MQ80)			

10. Stop Loss		
10.1 Support in Open Session		
10.2 Support in Pre-Market Session		
11 Cat other user orderbook changes under the same sustemer (BOS)		
11. Get other user orderbook changes under the same customer (BOS)		
12. Issuing Quote Request (MC4) (Maximum of 1 Quote Request per		
second)		
	[
13. Receiving Quote Request (MI4)		
14. Handling of the trading information for the traded series which		
Include Opening Price, Day High Price, Day Low Price, Last Traded		
14.1 For existing and newly added instrument series		
14.2 For existing and newly added TMC series		
14.2 For existing and newly added TMC series		
15. Market Maker Protection (MMP) for Market Makers Providing		
15.1 Tester can retrieve the parameters setting via query (DO87)		
15.1 Tester can retrieve the parameters setting via query (DQ07)		
identify the changes via broadcast (BU87)		
15.3 Tester can use transaction to change the "Ouantity Protection		
quantity", "Delta Protection quantity", "Exposure Limit Time		
Interval" and "Quotation Frozen time" (DC87)		
15.4 The program able to identify which underlying has MMP		
triggered and keeps normal (BO5 and BO38).		
15.5 Quotes will be rejected during the "Quotation Frozen time"		
period		
Time" period (optional for MM program that will use MO21 only)		
15.7 Reset the MMP setting (without changes the parameter) and issue		
guotes during the "Ouotation Frozen Time" period.		
15.8 MMP had been triggered in three classes, the program able to		
identify which underlying has MMP triggered and keeps normal		
(handling of more than one MMP triggering).		
A. Index Products (Index Futures and Options)		
B. Index Products (Flexible Index Options)		
C. Equity Products (Stock Futures)		
D. Equity Products (Stock Options)		
E. Currency Products		
F. Interest Rate and Fixed Income Products		
G. Commodities Products		

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We regularly review this Privacy Policy Statement and may from time to time revise it or add specific instructions, policies and terms. Where any changes to this Privacy Policy Statement are material, we will notify you using the contact details you have provided us with and, where required by the PDPO, give you the opportunity to opt out of these changes by means notified to you at that time. Otherwise, in relation to personal data supplied to us through the HKEX website or otherwise, continued use by you of the HKEX website or your continued relationship with us shall be deemed to be your acceptance of and consent to this Privacy Policy Statement, as amended from time to time.

If you have any questions about this Privacy Policy Statement or how we use your personal data, please contact us through one of the communication channels set out in the "Contact Us" section below.

We will take all practicable steps to ensure the security of the personal data and to avoid unauthorised or accidental access, erasure or other use. This includes physical, technical and procedural security methods, where appropriate, to ensure that the personal data may only be accessed by authorised personnel.

Please note that if you do not provide us with your personal data (or relevant personal data relating to persons appointed by you to act on your behalf) we may not be able to provide the information, products or services you have asked for or process your requests, applications, subscriptions or registrations, and may not be able to perform or discharge the Regulatory Functions (defined below).

Purpose

From time to time we may collect your personal data including but not limited to your name, mailing address, telephone number, email address, date of birth and login name for the following purposes:

 to process your applications, subscriptions and registration for our products and services;
 to perform or discharge the functions of HKEX and any company of which HKEX is the recognised exchange controller (as defined in the Securities and Futures Ordinance (Cap. 571)) ("Regulatory Functions");

3. to provide you with our products and services and administer your account in relation to such products and services;

4. to conduct research and statistical analysis;

to process your application for employment or engagement within HKEX to assess your suitability as a candidate for such position and to conduct reference checks with your previous employers; and

6. other purposes directly relating to any of the above.

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Where you have given your consent and have not subsequently opted out, we may also use your name, mailing address, telephone number and email address to send promotional materials to you and conduct direct marketing activities in relation to HKEX financial services and information services, and financial services and information services offered by other members of the Group.

If you do not wish to receive any promotional and direct marketing materials from us or do not wish to receive particular types of promotional and direct marketing materials or do not wish to receive such materials through any particular means of communication, please contact us through one of the communication channels set out in the "Contact Us" section below. To ensure that your request can be processed quickly please provide your full name, email address, log in name and details of the product and/or service you have subscribed.

Identity Card Number

We may also collect your identity card number and process this as required under applicable law or regulation, as required by any regulator having authority over us and, subject to the PDPO, for the purpose of identifying you where it is reasonable for your identity card number to be used for this purpose.

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Except to the extent you have already opted out we may transfer your name, mailing address, telephone number and email address to other members of the Group for the purpose of enabling those members of the Group to send promotional materials to you and conduct direct marketing activities in relation to their financial services and information services.

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For one or more of the purposes specified above, your personal data may be:

1. transferred to other members of the Group and made available to appropriate persons in the Group, in Hong Kong or elsewhere and in this regard you consent to the transfer of your data outside of Hong Kong;

2. supplied to any agent, contractor or third party who provides administrative,

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Corporate reorganisation

As we continue to develop our business, we may reorganise our group structure, undergo a change of control or business combination. In these circumstances it may be the case that your personal data is transferred to a third party who will continue to operate our business or a similar service under either this Privacy Policy Statement or a different privacy policy statement which will be notified to you. Such a third party may be located, and use of your personal data may be made, outside of Hong Kong in connection with such acquisition or reorganisation.

Access and correction of personal data

Under the PDPO, you have the right to ascertain whether we hold your personal data, to obtain a copy of the data, and to correct any data that is inaccurate. You may also request us to inform you of the type of personal data held by us. All data access requests shall be made using the form prescribed by the Privacy Commissioner for Personal Data ("Privacy Commissioner") which may be found on the official website of the Office of the Privacy Commissioner or via this link

https://www.pcpd.org.hk/english/publications/files/Dforme.pdf

Requests for access and correction of personal data or for information regarding policies and practices and kinds of data held by us should be addressed in writing and sent by post to us (see the "Contact Us" section below).

A reasonable fee may be charged to offset our administrative and actual costs incurred in complying with your data access requests.

Termination or cancellation

Should your account or relationship with us be cancelled or terminated at any time, we shall cease processing your personal data as soon as reasonably practicable following such cancellation or termination, provided that we may keep copies of your data as is reasonably required for archival purposes, for use in relation to any actual or potential dispute, for the purpose of compliance with applicable laws and regulations and for the purpose of enforcing any agreement we have with you, for protecting our rights, property or safety, or the rights, property or safety of our employees, and for performing or discharging our functions, obligations and responsibilities.

General

If there is any inconsistency or conflict between the English and Chinese versions of this Privacy Policy Statement, the English version shall prevail.

Contact us

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By Email: DataPrivacy@HKEX.COM.HK