

January 2019



**BRIEFING ON  
MARKET REHEARSAL FOR  
HKATS & DCASS UPGRADE**

**HKEX**  
香港交易所

# AGENDA

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Key Project Highlights

2

Market Rehearsal (MR)

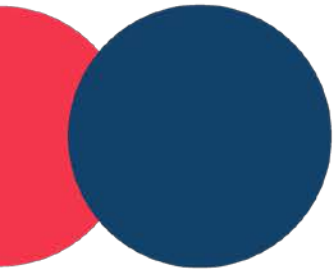
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Fallback Plan

4

Q&A






## KEY PROJECT HIGHLIGHTS

# KEY PROJECT HIGHLIGHTS

- HKATS and DCASS to be upgraded all together over a designated weekend (“Upgraded Platform”)

## Checklist for Market Rehearsal

- ✓ Certified HKATS and DCASS OAPI Program
- ✓ Ensure your internal system including Back Office System (BOS) is ready
- ✓ Tested and reported readiness<sup>1</sup> of market data feed handler for OMD-D<sup>2</sup> Clients including D-Lite
- ✓ Review and ensure sufficient SDNet bandwidth allocated to HKATS, DCASS and Market Data connectivities
- ✓ Ensure Google Chrome browser version 68.0.3440.106 has been installed in the HKATS & DCASS Online workstations  chrome
- ✓ Ensure the designated IP addresses are allowed by your host table and firewall for connections to HKATS & DCASS Online, OAPI Program etc (re Appendix 1)
- ✓ Participate weekday connectivity test
- ✓ Familiarise with HKATS & DCASS Online
- ✓ Study the Fallback Plan carefully
- ✓ Read and understand the MR Information Package
- ✓ Share the MR Information Package with your IT and vendors
- ✓ Submit designated contacts for MR to HKEX

Notes: <sup>1</sup> All OMD clients have to report readiness by filling in the [online form for OMD-D](#) and [D-Lite](#)

<sup>2</sup> Only for EP or IV who connects to OMD-D directly



# UPCOMING ACTIVITIES

2019

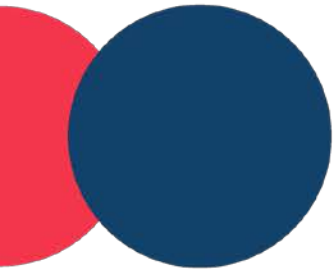


Date	Session	Scenarios
2 Mar	Connectivity	<ul style="list-style-type: none"> <li>Verify the production connection to the Upgraded HKATS &amp; DCASS and OMD-D</li> </ul>
9 Mar	MR Part A	<ul style="list-style-type: none"> <li>Daily Operations</li> <li>Volume Test</li> <li>Failover to secondary site</li> <li>Fallback from "Upgrade" to existing version</li> </ul>
16 Mar	MR Part B	<ul style="list-style-type: none"> <li>Daily Operations after launch of new products:                             <ul style="list-style-type: none"> <li>Products with 5-characters HKATS root symbol</li> <li>Weekly options (Optional)</li> <li>Self Trade Prevention (Optional)</li> </ul> </li> </ul>

**Mandatory for EP, CP and IV to participate ALL 3 MR sessions**



Note: <sup>1</sup> Subject to the result of MR & regulatory approval



## MARKET REHEARSAL (MR)

# MARKET REHEARSAL

## - OBJECTIVES

For EPs, CPs, OMD-D Clients and their respective supporting vendors to examine the end to end readiness for the Upgrade .....

### 2 March 2019, Connectivity Session

- verify the infrastructure, configuration and hardware (e.g. CG) setup for connecting to the Upgraded HKATS, DCASS and OMD-D, including the interface with the certificated OAPI Programs, BOS and Market Data Source  
*Note : after the completion of MR, verified system configuration, hardware and/or OAPI Programs, if applicable, should be retained for the launch*

### 9 March 2019, MR Part A

- verify daily operations after the Upgrade, via HKATS Online, DCASS Online, PTRM, OMD-D, OAPI Program and BOS during the normal operation session
- confirm the system performance & stability under high volume test session
- verify the configuration setup for HKATS, DCASS and OMD-D connection via HKEX's secondary site after site failover
- rehearse the in-house fallback arrangement for the 2 weeks stabilization period, report verification of DCASS reports against BOS & internal records
- Verify DCASS reports generated after fallback against BOS & internal reports to be received via email on 11 Mar 2019 (Mon)

### 16 March 2019, MR Part B

- verify normal operations with the introduction of weekly options and new products with 5-characters HKATS root symbol  
*Note : - EPs, CPs and OMD-D Clients who do not intend to support weekly options should also verify their OAPI Programs, BOS, OMD-D feed handler, and etc are operating normally towards the new system configurations e.g. modified Risk Parameter File (RPF).  
- Scanning Based Intercommodity Spread will not be covered in MR and subsequent format changes would not be appeared in RPF to be distributed during the test.*



# MARKET REHEARSAL SCHEDULE

## - CONNECTIVITY TEST ON 2 MAR 2019 (SAT)

	<u>Time</u>	<u>MR Session</u>	<u>Activities</u>
2 Mar (Sat)	13:00 – 16:00	Connect and Login	<ul style="list-style-type: none"> <li>Connect and login to HKATS, DCASS and OMD-D, including HKATS Online, DCASS Online, PTRM, OAPI Programs and market data source, via both HKEX's primary and secondary data centres</li> </ul>
	16:00	End of Connectivity Test	<ul style="list-style-type: none"> <li>Disconnect from HKATS, DCASS and OMD-D</li> </ul>
	Before 17:00	Confirmation	<ul style="list-style-type: none"> <li>Complete and submit the MR Connectivity Test Confirmation Form</li> </ul>
	17:00 onwards	HKEX restore HKATS, DCASS and OMD-D to the production version	
3 Mar (Sun)	09:00 – 11:00	Production Verification (Optional)	<ul style="list-style-type: none"> <li>Verify production connectivity to the existing HKATS, DCASS and OMD-D version</li> </ul>





# MARKET REHEARSAL SCHEDULE

- MR PART A ON 9 MAR 2019 (SAT)

	<u>Time</u>	<u>MR Session</u>	<u>Activities</u>
9 Mar (Sat)	13:00 – 13:45	Connect and Login	<ul style="list-style-type: none"> <li>Connect and login to HKATS Online, DCASS Online, PTRM, OMD-D and OAPI Programs</li> <li>Perform post-trade activities on the pre-defined trades executed on 8 Mar 2019</li> </ul>
	13:45 – 14:00	Pre-Open / Pre-Market Activities	<ul style="list-style-type: none"> <li>HKEX captures CP positions as of 13:45 for the mandatory intra-day variation adjustment / margin call (for AHT products only) and receive updated RPF</li> </ul>
	14:00 – 15:00	Continuous Trading (T)	<ul style="list-style-type: none"> <li>Simulate daily trading and clearing operations</li> <li>Mandatory intra-day variation adjustment / margin call and receive updated RPF</li> <li>1<sup>st</sup> volume test</li> </ul>
	15:00 – 15:40	Failover to Secondary Data Centre	<ul style="list-style-type: none"> <li>HKEX activate HKATS, DCASS and OMD-D at the secondary data centre</li> <li>Participants to logout from HKATS Online, DCASS Online, OMD-D and OAPI Programs</li> </ul>
	15:40 – 16:15	Connect and Login	<ul style="list-style-type: none"> <li>Login to HKATS Online, DCASS Online, PTRM, OMD-D and OAPI Programs</li> </ul>
	16:15 – 17:00 (Clearing close at 17:30)	Continuous Trading (T)	<ul style="list-style-type: none"> <li>Trading resumes at 16:15 and closes at 17:00, clearing close at 17:30</li> <li>Ad hoc intra-day variation adjustment / margin call and receive updated RPF</li> <li>2<sup>nd</sup> volume test</li> </ul>
	17:15 – 17:45 (Clearing close at 18:00)	Continuous Trading (T+1)	<ul style="list-style-type: none"> <li>Simulate daily trading &amp; clearing operations</li> <li>CP to perform post-trade activities for T &amp; T+1 trades</li> <li>Intra-day CBPL monitoring during T+1 session (for HKCC only) and receive updated RPF</li> </ul> <p><i>Note : For Participants who do not participate in AHT session, their MR execution ended upon closing of Clearing T session at 17:30. Please log out from HKATS &amp; DCASS.</i></p>
	18:00	End of MR	<ul style="list-style-type: none"> <li>Disconnect from HKATS, DCASS and OMD-D</li> <li><b>EP to complete and submit the MR Part A Confirmation Form by 19:00</b></li> <li><b>OMD clients to submit duly completed Online Result Confirmation form by 19:00</b></li> </ul>
	18:00 onwards		HKEX restore HKATS, DCASS and OMD-D to production version
10 Mar (Sun)	09:00 – 11:00	Production Verification (Optional)	<ul style="list-style-type: none"> <li>Verify production connectivity to the existing HKATS, DCASS and OMD-D version</li> </ul>

Note : Please refer to the "Market Rehearsal for HKATS & DCASS Upgrade Information Package" for details.

# MARKET REHEARSAL SCHEDULE

## - REPORT VERIFICATION FOR MR PART A ON 9 MAR

For CP only

<u>Date</u>	<u>Time</u>	<u>Task</u>	<u>Activities</u>
11 Mar 2019 (Mon)	Before 19:00	Report Verification	<ul style="list-style-type: none"><li>• Receive 2 sets of DCASS and CCMS reports from HKEX via email<ul style="list-style-type: none"><li>a) upgraded version, simulating online session before fallback</li><li>b) existing Genium version, simulating fallback scenario</li></ul></li><li>• Verify the DCASS reports against BOS / internal records for the post-trades activities performed during MR Part A on 9 Mar 2019 (Sat)</li></ul>
13 Mar 2019 (Wed)	Before 18:00	Confirmation	<ul style="list-style-type: none"><li>• Complete and submit duly signed Confirmation Form</li></ul>



# MARKET REHEARSAL SCHEDULE

## - MR PART B ON 16 MAR 2019 (SAT)

	<u>Time</u>	<u>MR Session</u>	<u>Activities</u>
16 Mar (Sat)	13:00 – 13:45	Connect and Login	<ul style="list-style-type: none"> <li>Connect and login to HKATS Online, DCASS Online, PTRM, OMD-D and OAPI Programs</li> <li>Perform post-trade activities on the pre-defined trades executed on 15 Mar 2019</li> </ul>
	13:45 – 14:00	Pre-Open / Pre-Market Activities	<ul style="list-style-type: none"> <li>HKEX captures CP positions as of 13:45 for the mandatory intra-day variation adjustment and margin call (for AHT products only) and receive updated RPF</li> </ul>
	14:00 – 15:30 (Clearing close at 16:00)	Continuous Trading (T)	<ul style="list-style-type: none"> <li>Simulate daily trading and clearing operations</li> <li>Mandatory intra-day variation adjustment / margin call and receive updated RPF</li> </ul>
			<ul style="list-style-type: none"> <li>Ah hoc intra-day variation adjustment / margin call and receive updated RPF</li> <li>Trading closes at 15:30, clearing closes at 16:00</li> </ul>
	15:45 – 16:30 (Clearing close at 17:00)	Continuous Trading (T+1)	<ul style="list-style-type: none"> <li>Simulate daily trading &amp; clearing operations</li> <li>CP to perform post-trade activities for T+1 trades</li> <li>Intra-day CBPL monitoring during T+1 session (for HKCC only) and receive updated RPF</li> </ul> <p><i>Note : For Participants who do not participate in AHT session, their MR execution ended upon closing of Clearing T session at 17:00. Please log out from HKATS &amp; DCASS.</i></p>
	17:00	End of MR	<ul style="list-style-type: none"> <li>Disconnect from HKATS, DCASS and OMD-D</li> <li><b>EP to complete and submit the MR Part A Confirmation Form by 18:00</b></li> <li><b>OMD Clients to submit duly completed Online Result Confirmation form by 18:00</b></li> </ul>
	17:00 onwards	HKEX restore HKATS, DCASS and OMD-D to production version	
17 Mar (Sun)	09:00 – 11:00	Production Verification (Optional)	<ul style="list-style-type: none"> <li>Verify production connectivity to the existing HKATS, DCASS and OMD-D version</li> </ul>



# MARKET REHEARSAL SCHEDULE

## - REPORT VERIFICATION FOR MR PART B ON 16 MAR

For CP only

<u>Date</u>	<u>Time</u>	<u>Task</u>	<u>Activities</u>
18 Mar 2019 (Mon)	Before 19:00	Report Verification	<ul style="list-style-type: none"><li>• Receive 1 set of DCASS and CCMS reports from HKEX via email</li><li>• Verify the DCASS reports against BOS / internal records for the post-trades activities performed during MR Part B on 16 Mar 2019 (Sat)</li></ul>
20 Mar 2019 (Wed)	Before 18:00	Confirmation	<ul style="list-style-type: none"><li>• Complete and submit duly signed Confirmation Form</li></ul>




# MARKET REHEARSAL - IMPORTANT NOTES

## System Availability

- Only HKATS, DCASS and OMD-D will be available
- CCMS and Report Retrieval Solution will **NOT** be available

## Technical Setup for MR

Before MR, Participants must ensure

<b>Firewall</b>	Designated IP addresses and port numbers (re Appendix 3) should be used for host table and firewall for connections to the HKEX's CG
<b>Browser</b>	Google Chrome browser version 68.0.3440.106 is installed for HKATS Online, DCASS Online and PTRM  chrome
<b>Java</b>	Java version 1.8 with TLS 1.0, 1.1 & 1.2 Security setting are required for PTRM after the Upgrade, which is also compatible with current production PTRM version
<b>Hardware</b>	Hardware & bandwidth for HKATS Online & DCASS Online are in place and meets the minimum configuration (re Appendix 2)

## Support during MR

- Participants should arrange IT and / or system vendor support with appropriate system administration ID during MR
- Participants should ensure the participating staff members have appropriate user function access and operation knowledge to perform the required HKATS & DCASS activities including PTRM functions during MR

Note : Please refer to the "Market Rehearsal for HKATS & DCASS Upgrade Information Package" for details.



# MARKET REHEARSAL

## - IMPORTANT NOTES (CONT'D)

### HKATS & DCASS User names and Passwords

- For HKATS Online, DCASS Online , PTRM and OAPI Programs login during MR, Participants are reminded to use their production user ID with testing password “hkextesting”

### Pre-defined Data

- Pre-defined trades and post-trades will be set up

### Handling of Testing Reports

- Ensure DCASS reports received via email during MR and for fallback verification purposes would NOT be mixed up with their production reports

### Connection

- Do not reboot or shut down current production NG during MR



# MARKET REHEARSAL - COMMUNICATION CHANNELS

## Normal Situation




- via the Market Message Window of HKATS Online
- via the Clearing Message Window of DCASS Online
- via email(s) of the designated contact person(s) for MR

## Emergency Situation

- via email(s) of the designated contact person(s) for MR
- Participants should ensure that they have access to the email(s) of the designated contact person(s) throughout the MR period

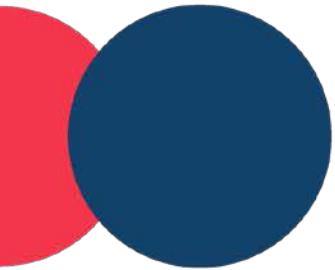


# MARKET REHEARSAL - IMPORTANT DATES

Date	Time	Confirmation Form
 2 Mar 2019 (Sat)	13:00 – 16:00	Connectivity Test
	Before 17:00	Complete and submit MR Connectivity Test Confirmation Form
3 Mar 2019 (Sun)	9:00 – 11:00	(Optional) Production Verification
 9 Mar 2019 (Sat)	13:00 – 18:00	MR Part A
	Before 19:00	Complete and submit MR Confirmation Form – MR Part A – <u>EP Only</u> Complete and submit Online Result Confirmation Form – <u>OMD-D Clients Only</u>
10 Mar 2019 (Sun)	9:00 – 11:00	(Optional) Production Verification
13 Mar 2019 (Wed)	Before 18:00	Complete and submit MR Confirmation Form – MR Part A – <u>CP Only</u>
 16 Mar 2019 (Sat)	13:00 – 17:00	MR Part B
	Before 18:00	Complete and submit MR Confirmation Form – MR Part B – <u>EP Only</u> Complete and submit Online Result Confirmation Form – <u>OMD –D Clients Only</u>
17 Mar 2019 (Sun)	9:00 – 11:00	(Optional) Production Verification
20 Mar 2019 (Wed)	Before 18:00	Complete and submit MR Confirmation Form – MR Part B – <u>CP Only</u>







# FALLBACK PLAN

# FALLBACK PLAN - HIGHLIGHTS

## During the 2-week Stabilisation Period

- Maintain existing production applications<sup>1</sup>
- Do NOT change any password and user access profile
- Maintain proper records of orders, trades and post-trades

## Upon Fallback

- Fallback to existing production applications<sup>1</sup> and verify connectivity
- Verify the reloaded and converted data via the existing production applications, via CLICK Workstations, DCASS Terminals and DCASS reports
  - ALL outstanding orders will be cancelled
  - Verify that the order book should be emptied with no outstanding order
  - Re-input post-trade transactions, if applicable

***Fallback Plan is only applicable during the 2-week Stabilisation Period***



# REFERENCES & ENQUIRIES

## REFERENCES

Please visit [HKATS & DCASS Upgrade Web Corner](#) for up-to-date information on HKATS & DCASS Upgrade:

- MR Information Package
- Fallback Plan etc

## ENQUIRIES

### HKATS

- HKATS Hotline: 2211 6360<sup>1</sup>
- Email: [hkatssupport@hkex.com.hk](mailto:hkatssupport@hkex.com.hk)

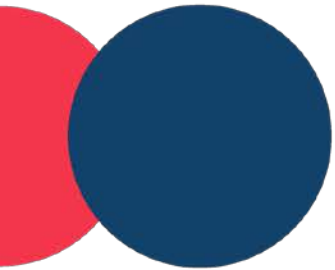
### DCASS

- DCASS Hotline: 2979 7222
- Email: [ClearingPSD@hkex.com.hk](mailto:ClearingPSD@hkex.com.hk)

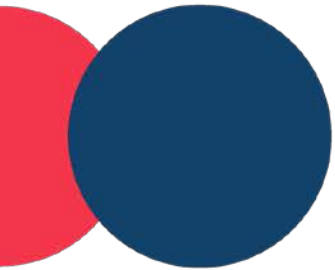
### OMD-D

- Data Connectivity and Support Hotline: 2211 6558
- Email: [IVSupport@hkex.com.hk](mailto:IVSupport@hkex.com.hk)





Q&A



# APPENDICES

# APPENDIX 1

## FIREWALL WHITELIST AS PASS-THROUGH FOR HKATS & DCASS ONLINE

HKEX's Data Centre	Gateway number	IP Address (Server Name)	Host Table Update	TCP / Port Number	URL of HKATS & DCASS Online
Primary	1	10.151.14.155 (pgencdw001)	10.151.14.155 pgencdw001.hkex.com.hk	8082	<a href="https://pgencdw001.hkex.com.hk:8082/login">https://pgencdw001.hkex.com.hk:8082/login</a>
	2	10.151.14.156 (pgencdw002)	10.151.14.156 pgencdw002.hkex.com.hk		<a href="https://pgencdw002.hkex.com.hk:8082/login">https://pgencdw002.hkex.com.hk:8082/login</a>
	3	10.151.14.101 (pgenrgw001)	10.151.14.101 pgenrgw001.hkex.com.hk		<a href="https://pgenrgw001.hkex.com.hk:8082/login">https://pgenrgw001.hkex.com.hk:8082/login</a>
	4	10.151.14.102 (pgenrgw002)	10.151.14.102 pgenrgw002.hkex.com.hk		<a href="https://pgenrgw002.hkex.com.hk:8082/login">https://pgenrgw002.hkex.com.hk:8082/login</a>
Secondary	5	10.152.14.155 (sgencdw001)	10.152.14.155 sgencdw001.hkex.com.hk		<a href="https://sgencdw001.hkex.com.hk:8082/login">https://sgencdw001.hkex.com.hk:8082/login</a>
	6	10.152.14.156 (sgencdw002)	10.152.14.156 sgencdw002.hkex.com.hk		<a href="https://sgencdw002.hkex.com.hk:8082/login">https://sgencdw002.hkex.com.hk:8082/login</a>
	7	10.152.14.101 (sgenrgw001)	10.152.14.101 sgenrgw001.hkex.com.hk		<a href="https://sgenrgw001.hkex.com.hk:8082/login">https://sgenrgw001.hkex.com.hk:8082/login</a>
	8	10.152.14.102 (sgenrgw002)	10.152.14.102 sgenrgw002.hkex.com.hk		<a href="https://sgenrgw002.hkex.com.hk:8082/login">https://sgenrgw002.hkex.com.hk:8082/login</a>

Participants should login from the below authorised IP range:

Authorised IP Range	Purpose
xx.xx.xx.1 to 5	HKATS & DCASS Online / OAPI
xx.xx.xx.21 to 30	HKATS & DCASS Online / OAPI



## APPENDIX 2

### - HARDWARE & SOFTWARE REQUIREMENTS

The requirements for HKATS & DCASS Online are listed below:

HKATS & DCASS Online	Minimum Requirement
Processor	Intel Core i3-550 3.2GHz or higher
RAM	4GB
Storage	3GB disk space available
Network adapter	100Mbps full-duplex
Monitor	21" with 1280 x 1024 resolution
Operating System	Microsoft Windows 7 (64 bit) (English)
Layered software	Anti-virus software
Supported Browser	Google Chrome <sup>1</sup> browser - version 68.0.3440.106 - Language Setting: English (United States)
Network Circuit	Via SDNet connection with firewall / services ports configuration, if necessary



Note <sup>1</sup> Google Chrome will be the supported Browser with JAVA 1.8 for PTRM as well

## APPENDIX 3

### - PRELIMINARY BANDWIDTH REQUIREMENTS

The minimum bandwidth requirements for HKATS & DCASS are listed below:

Per Connection		Bandwidth Requirement	
		HKATS only	DCASS only
Central Gateway	OAPI	3 Mbps <sup>1</sup>	3 Mbps
	HKATS Online / DCASS Online	0.4 Mbps	0.4 Mbps
	Report Retrieval Solution	N/A	1 Mbps
PTRM Gateway		1 Mbps	



Note <sup>1</sup> 3 Mbps is optimal for support up to 250 TPS with 2 copies of firm based broadcast (BO5)



## APPENDIX 3

### - PRELIMINARY BANDWIDTH REQUIREMENTS (CONT'D)

The minimum bandwidth requirements for OMD-D (including D-Lite) are listed below:

Datafeed plus add-ons	Non-SOM	SOM	Non-SOM + SOM	Derivatives Trade ("DT") <sup>1</sup>	OMD-Index <sup>1</sup>	SDNet/2 High Performance Option <sup>2</sup>
Derivatives Standard (DS)	14 Mbps	14 Mbps	28 Mbps	2Mbps	Negligible	N/A
Derivatives Premium (DP)	26 Mbps	34 Mbps	60 Mbps	N/A	Negligible	Please see note
Derivatives FullTick (DF)	25 Mbps	35 Mbps	60 Mbps	N/A	Negligible	Please see note
D-Lite – Price Depth Feed	6 Mbps	8 Mbps	14 Mbps	2Mbps	Negligible	N/A
D-Lite – Order Feed <sup>1</sup>	3 Mbps			N/A	N/A	N/A

Notes: <sup>1</sup> Complementary feed

<sup>2</sup> DP and DF Clients have to subscribe to lines with High Performance Option (HPO) to avoid potential data loss in the event of bursty traffic that could happen in the production environment.

