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HKATS RISK FUNCTION  
PRE-TRADE RISK MANAGEMENT IN  
DERIVATIVES MARKET

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# Agenda

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## Introduction

- Pre-Trade Risk Management (“PTRM”) follows the global regulatory directions, e.g., as described in “Principles for Direct Electronic Access to Markets” by the International Organization of Securities Commissions (IOSCO). Under these principles, intermediaries retain ultimate responsibility for all orders under their authority and are responsible for pre-trade controls, but exchanges can facilitate this by providing the necessary transparency to ensure that intermediaries are able to meet their obligations
- Recommendations by Futures Industry Association (FIA) are considered
- PTRM tools at exchange level has already been in place with major derivatives exchanges (e.g., Eurex, CME)
- Clearing Participant Protection - PTRM helps prevent participants from unintended and rapid build-up of excessive positions due to erroneous trading algorithm
- The tentative rollout date of the PTRM system in derivatives markets is scheduled on 11<sup>th</sup> April 2016 subject to regulatory approval. The new PTRM system will be incorporated into the current HKEX derivatives trading platform Hong Kong Automated Trading System (“HKATS”) and named HKATS Risk Functions (“HKATS RF”)



## Introduction: Scope of HKATS Risk Functions

- Applicable to HKATS Derivatives Market
- Risk checks at Exchange Participant's (EP's) firm level. Not investor account level checks
- Mandatory risk checks to EVERY order placed to HKATS
- Complementary to Participants' own risk controls
- Enable risk limit settings on the by:
  - Self-Clearing EPs on the Trading IDs of their Trading Units
  - General Clearing Participants (GCPs) on the Trading IDs of their Non-Clearing Participant (NCP) Customer's Trading IDs

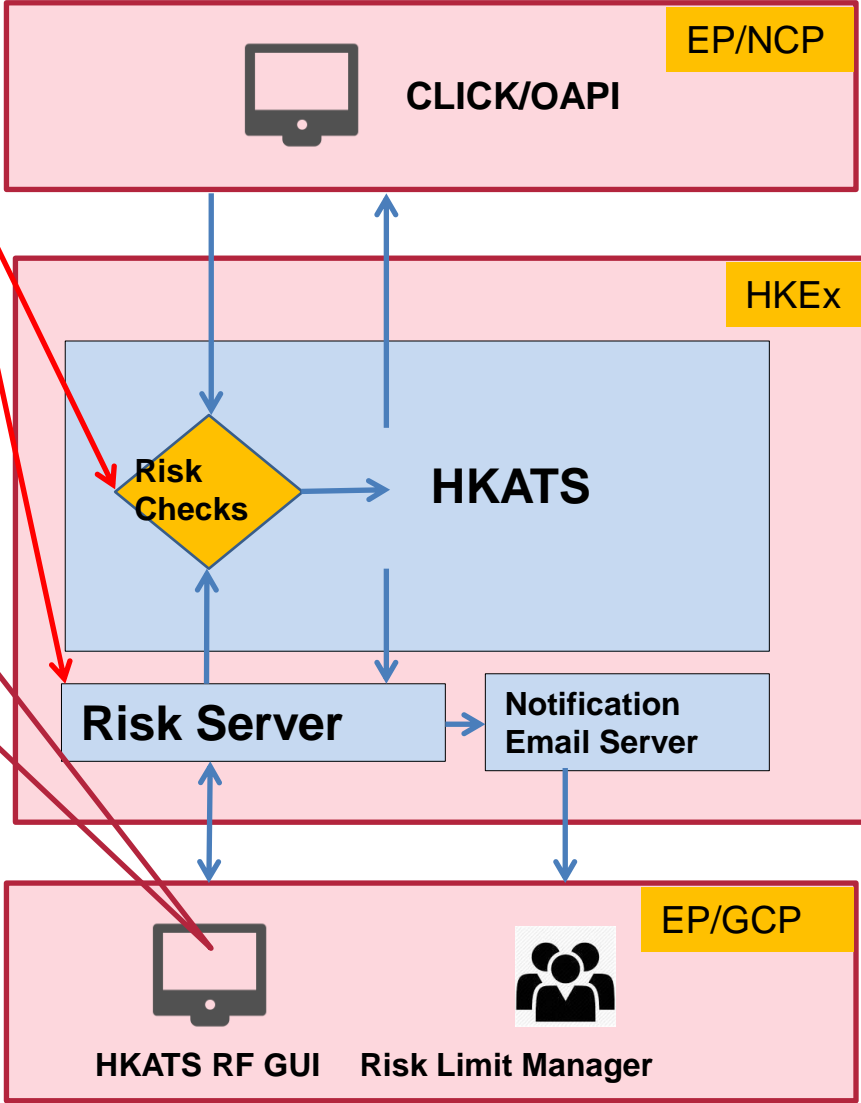


# Overview of HKATS RF: Key Concepts

- Applicable to HKATS Derivatives Market
- Mandatory risk checks for all inbound HKATS orders
- Enable Risk Limit Managers to set Risk Limits against these Risk Checks on their own Trading IDs or the Trading IDs of their NCP customers
- Risk Limits can be set upon a Risk Group which contains one or more Trading IDs (HKATS Usernames)
- Depending on the nature of Risk Checks, orders will be rejected or the Risk Group will be blocked
- Emergency Buttons on Risk Group for Participants:
  - Block/Stop
  - Unblock/Unstop (Only for DCP/GCP)
  - Mass Order Cancellation
  - Kill Switch

<b>Intraday Risk Checks:</b>
Max Order Size
Max Order Rate
Max Intraday Exposure

<b>HKATS RF GUI Functions:</b>
Defining Risk Groups
Setting up Risk Limits
Emergency Buttons



▪ HKATS RF GUI is a Java web based graphical user interface that allows Participants to perform PTRM functions. The GUI connection is done thru existing HKATS production networks and will be given to a Participant assigned **Risk Limit Manager**



## Overview of HKATS RF: Access Rights for Different Participantships

Access Right	Define Risk Groups	Setting Limits	Emergency Buttons
Risk Limit Manager	✓	✓	✓
*Trading Units	X	X	✓ Unblock/Unstop by their GCP

\* NCPs will only be granted the access right of a Trading Units



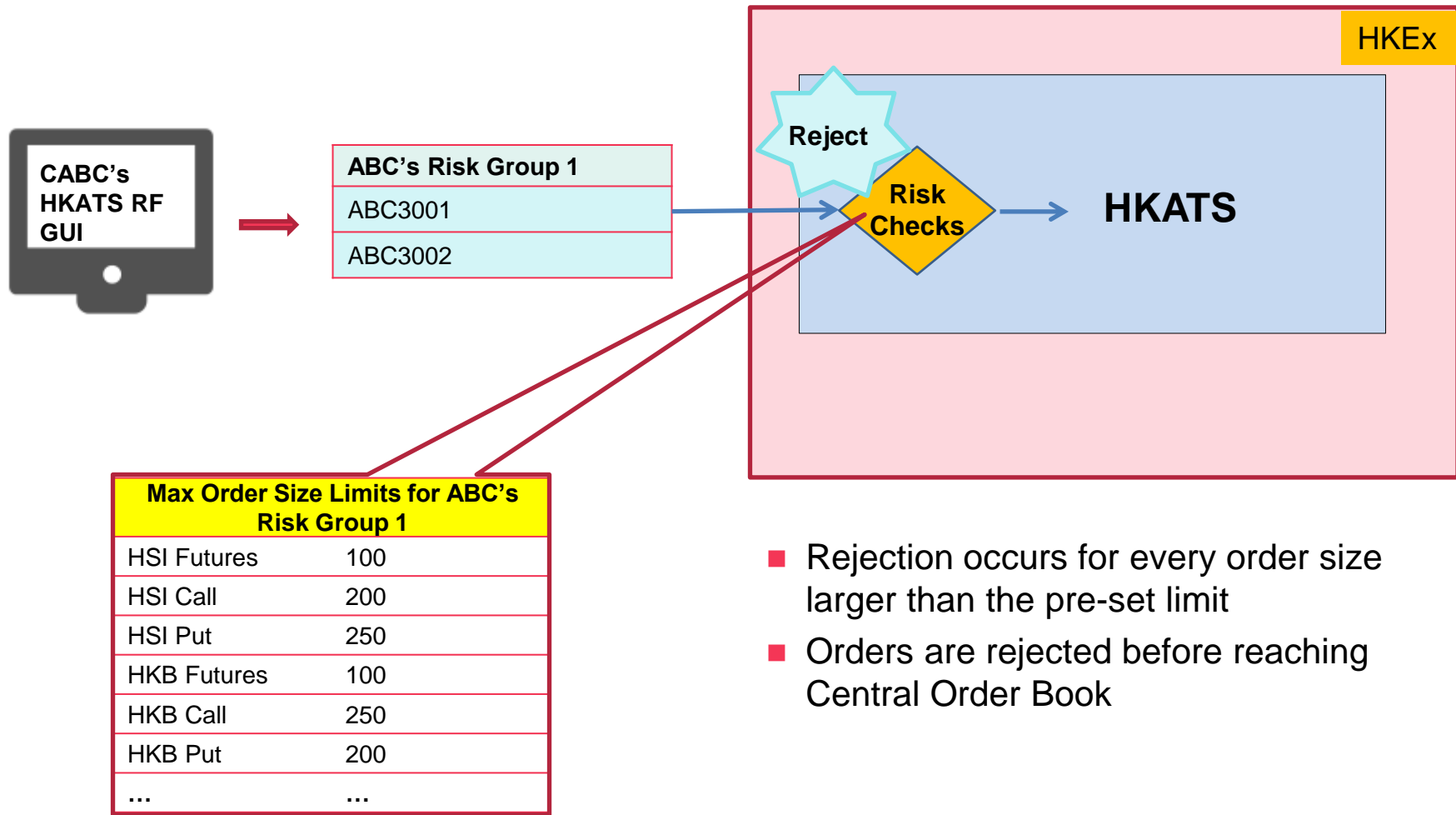
## Overview of HKATS RF: Risk Checks

Risk Check	Description	Feature
<b>Max Order Size</b>	<ul style="list-style-type: none"> <li>Allow more granularity for order size limits</li> <li>Different settings for different underlying futures, calls and puts</li> </ul>	<ul style="list-style-type: none"> <li>Non-accumulative</li> <li>Order sizes are checked every time before reaching the Central Order Book</li> </ul>
<b>Max Order Rate</b>	<ul style="list-style-type: none"> <li>Allow Participants to manage the number of orders that can be entered into the market per a pre-set period of time</li> <li>Single order (MO31) and double-sided quotes (MO37)</li> </ul>	<ul style="list-style-type: none"> <li>Accumulative</li> <li>Risk Limit consumption and calculation will be done at PTRM Server</li> <li>Upon a Risk Limit breach, subsequent orders from the corresponding Risk Group will be rejected</li> </ul>
<b>Max Intraday Exposure</b>	<ul style="list-style-type: none"> <li>Allow Participants to limit the intraday exposure associated with a Trading ID a group of Trading IDs</li> </ul>	

■ HKEx will review Risk Limits set by Participant periodically

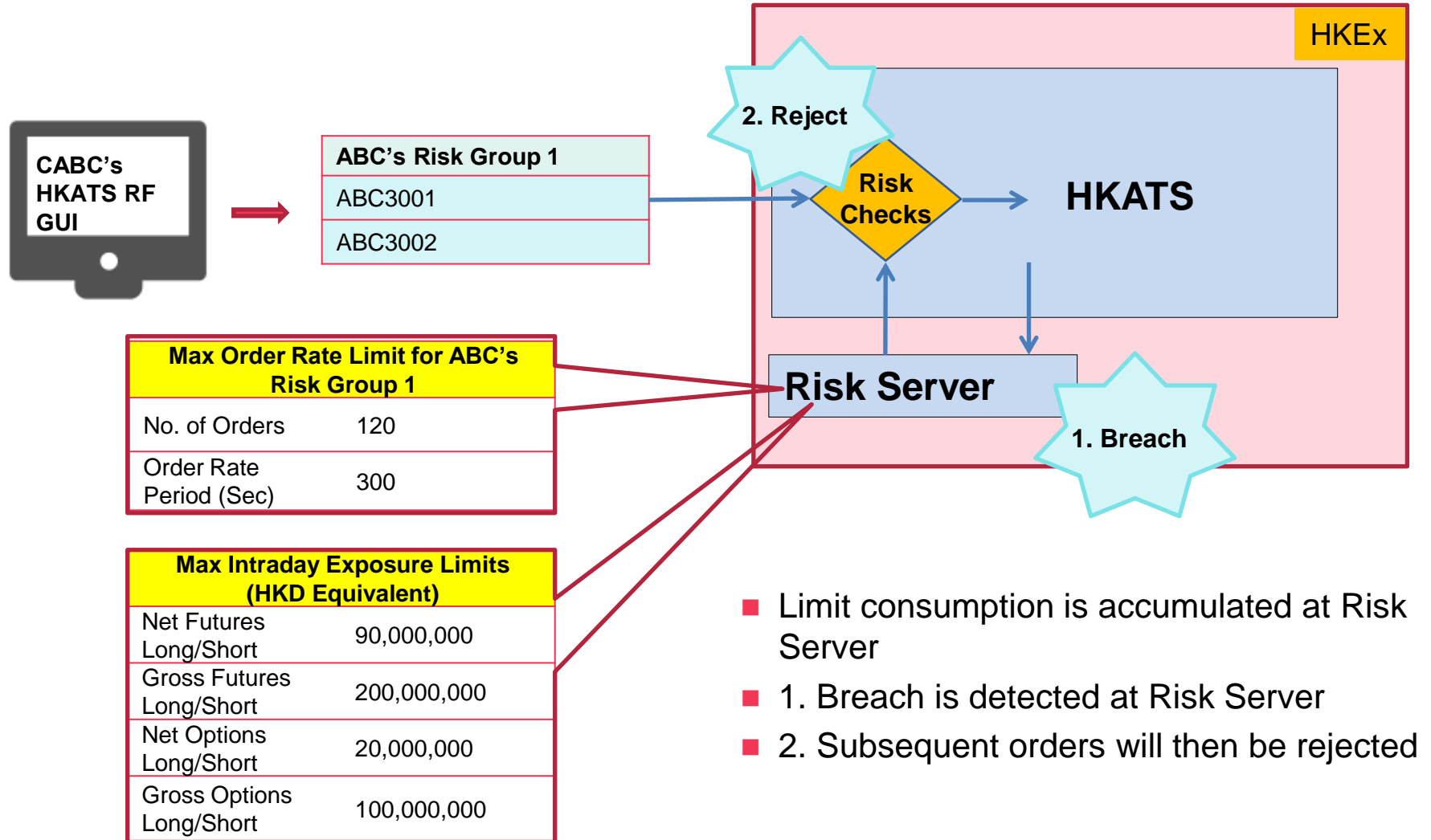


# Overview of HKATS RF: An Example of Max Order Size Risk Check





# Overview of HKATS RF: An Example of Max Order Rate Risk Check/Max Intraday Exposure Check



- Limit consumption is accumulated at Risk Server
- 1. Breach is detected at Risk Server
- 2. Subsequent orders will then be rejected

## Overview of HKATS RF: Emergency Buttons in HKATS RF GUI

Emergency Button	Description
Mass Order Cancellation	<ul style="list-style-type: none"><li>▪ Cancel all open orders of a Risk Group</li></ul>
Block	<ul style="list-style-type: none"><li>▪ Block the Trading ID (s) of a Risk Group from entering new orders</li><li>▪ The Trading ID (s) of a blocked Risk Group can still cancel outstanding orders</li></ul>
Kill Switch	<ul style="list-style-type: none"><li>▪ A combination of Block and Mass Order Cancellation functions in one action</li></ul>
Unblock	<ul style="list-style-type: none"><li>▪ Resume order entry of a blocked Risk Group</li><li>▪ Risk Limit Manager can unblock a Risk Group by updating the breached Risk Limit and then unblock the Risk Group</li></ul>

- Participants are reminded to use the above buttons in emergency situations only



## Advantages

- Provide Participants an additional back-stop in case of emergency
- An extra tool for Participants to monitor algo tradings
- Minimal impact to Participants upon technical implementation
- Free-of-charge basic number of GUI connections (3 per Exchange Participantship)
- Promoting market integrity



## **Important Document**

“HKATS Risk Functions User’s Guide”

## **HKEx Technical Support**

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