



NextGen Risk Management Platform (NGRM) - Familiarisation Programme Phase 2

August 2021

HKEX
香港交易所

Agenda

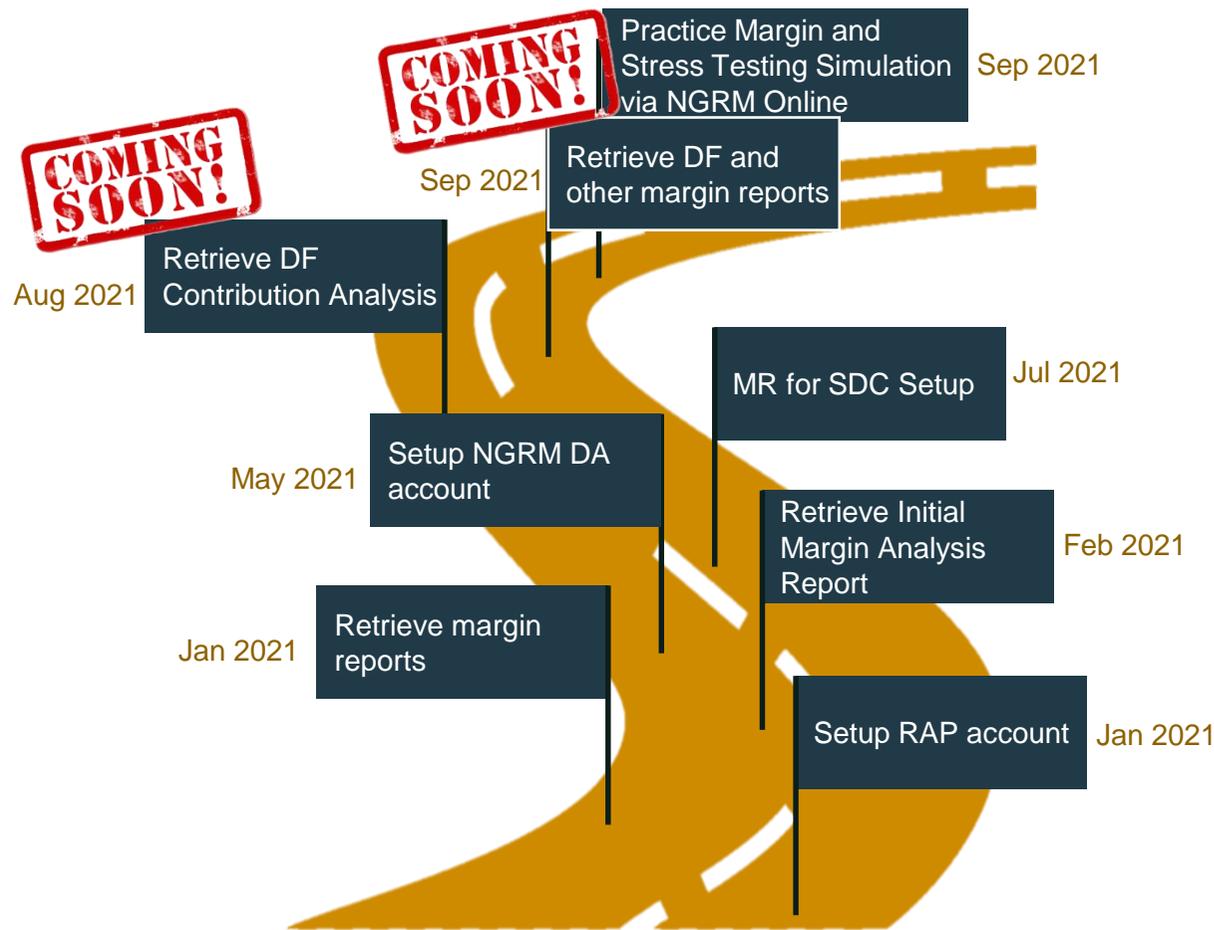
- Familiarisation Programme
 - Overview
 - Tentative Programme Schedule
 - Scope of Phase 2
 - Important Information
- HKSCC Default Fund (“DF”) Sizing and Allocation under Next Generation Risk Models (“NG Risk Models”)



Familiarisation Programme

- Overview

To ensure a smooth transition from existing risk management arrangement to new risk model supported by NGRM, before the official launch of NGRM, HKSCC has launched a Familiarisation Programme since January 2021 to facilitate Clearing Participants (CPs) to:

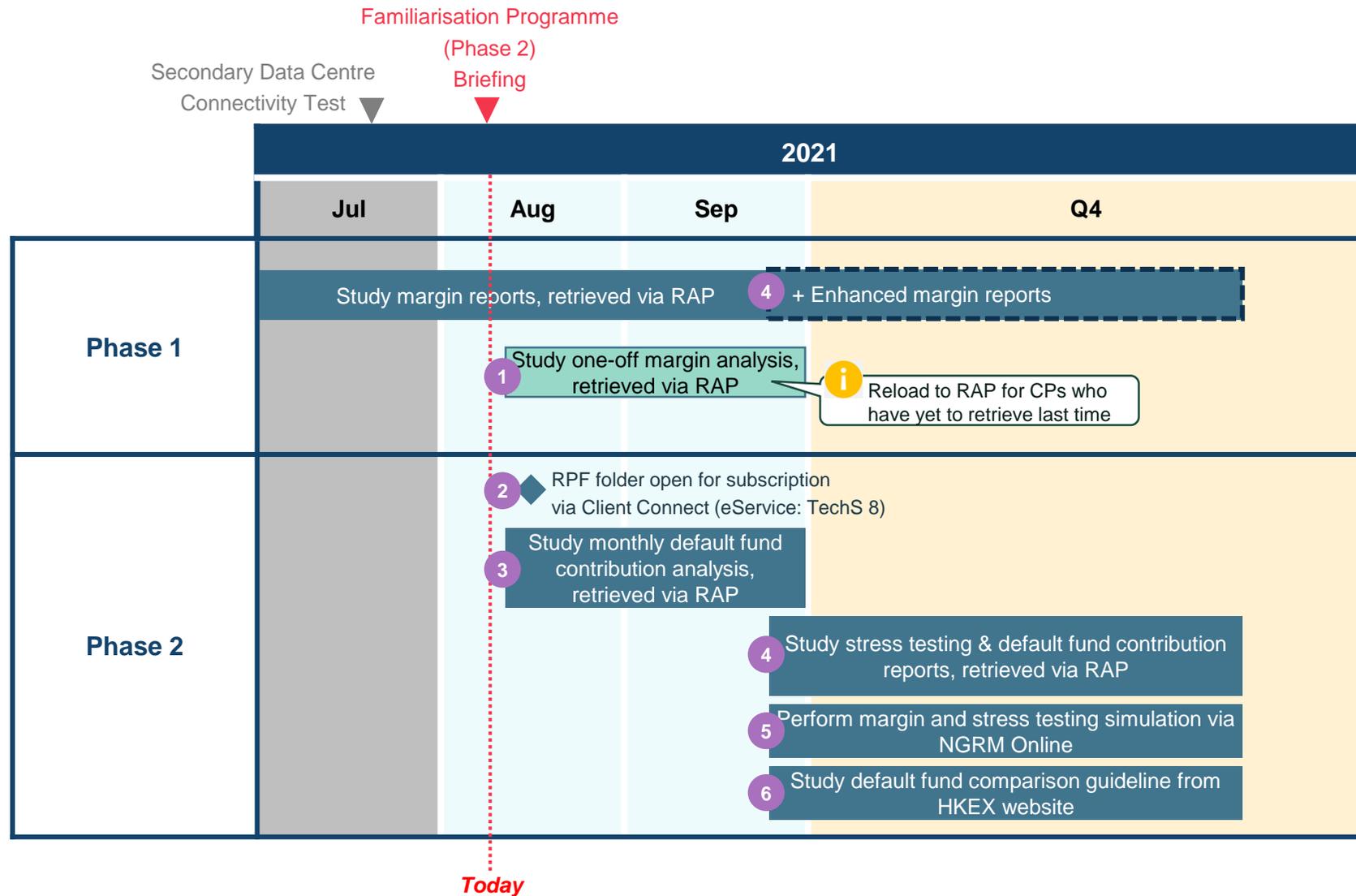


CPs should participate in the Familiarisation Programme, study the new risk reports and understand the margin impact, then evaluate and modify any internal operational flow if needed.



Familiarisation Programme (Cont'd)

- Tentative Programme Schedule



All NGRM reports & information obtained during the Familiarisation Programme are for reference only.
CPs should continue to settle their risk related payments based on CCASS reports.



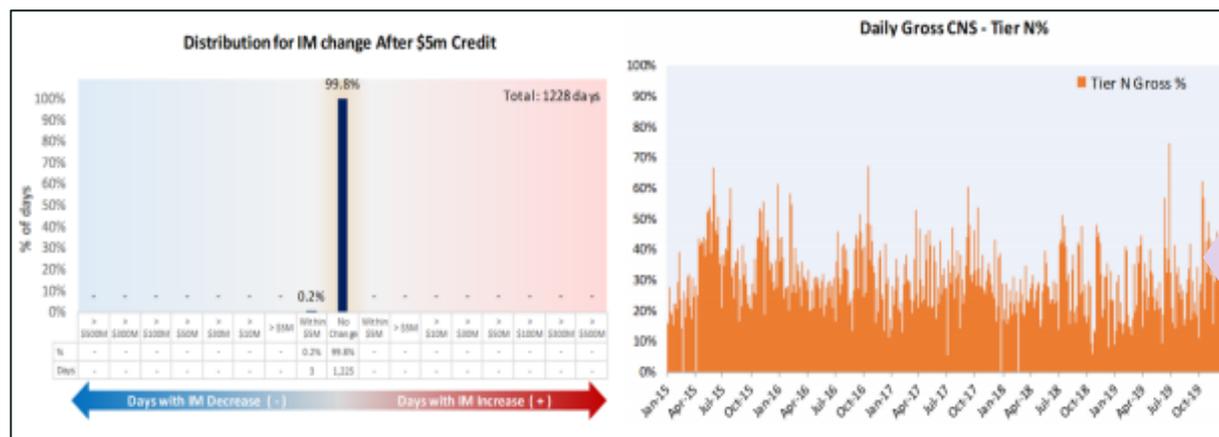
Familiarisation Programme (Cont'd)

- Scope of Phase 2

From 9 Aug 2021 onwards, the below features and files are added to be subscribed or retrieved by CPs:

1. **One-off Initial Margin Analysis Report** will be available to download via RAP (for CPs who have yet to do so), until end-Sep 2021

Sample of the Initial Margin Analysis Report :



Reminder

➤ The file will only be available for retrieval from the “INBOX/YYYYMMDD” subfolder in RAP, where YYYYMMDD refers to every Monday during the familiarisation period

2. New folder in RAP - “**RPF Folder**”, to facilitate interested CPs to perform margin and stress testing calculation, will be opened for subscription via [Client Connect](#) (eService: TechS 8)



Familiarisation Programme (Cont'd)

- Scope of Phase 2

- Monthly Default Fund Contribution Analysis** calculated based on CPs' actual portfolios for the months of May and Jun 2021 will be available to download via RAP, until end-Sep 2021
 - Analysis for subsequent months will be further released in Sep 2021 tentatively

Sample of the Default Fund Contribution Analysis:

Default Fund Contribution Analysis Dashboard (Data Period: May - Jun 2021)
XXX Limited (BXXXX1)

Purpose

- As part of the Familiarisation Programme for CPs to familiarise with the Default Fund ("DF")¹ contribution and hence better plan for funding and liquidity arrangement of the new stress testing model implementation.

DF sizing and allocation

- Please refer to "NextGen Risk Models-Default Fund Sizing and Allocation Seminar (Aug 2021)" available under "Briefing Materials" tab at https://www.hkex.com.hk/Services/Next-Generation-Post-Trade-Programme/NextGen-Risk-Management?sc_lang=en

Common causes of changes in DF contribution

- The change in total DF size – the Expected Uncollateralized Loss ("EUL")² of the 1st and 5th largest CPs calculated based on more complex scenarios under the NG Risk Models.
- The change in DF allocation – based on a more risk-based approach³ (i.e., EUL that the individual CP contributes to the entire market).



Reminder

➤ The file will only be available for retrieval from the "INBOX/YYYYMMDD" subfolder in RAP, where YYYYMMDD refers to every Monday during the familiarisation period

Total DF Size			
Month	NG	Current	Change
	HKD \$M	HKD \$M	HKD \$M
May	172.15	92.83	79.32
Jun	159.73	88.60	71.13

CP's DF Contribution			
Month	NG	Current	Change
	HKD \$M	HKD \$M	HKD \$M
May	88.01	159.21	-71.20
Jun	103.97	166.38	-62.41

¹ Also known as Guarantee Fund ("GF")
² The largest daily EUL in the past 60 business days
³ In contrast to CNS position based approach used under the current model



Familiarisation Programme (Cont'd)

- Scope of Phase 2

CPs can access to more features of NGRM in the later stage of Phase 2, including:

- NGRM margin and default fund reports** calculated based on the new risk models will be available to download via RAP

 Enhanced Reports¹	New Reports¹ 
<p>Margin Reports:</p> <ul style="list-style-type: none"> • Marginable Position Report (RMAMP01) • MTM and Margin Requirement Report (RMAMR01) • MTM and Margin Requirement Report (Summary Version) (RMAMR03) <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <p>Intraday margin estimation report will be available via RAP during the Familiarisation Programme</p> </div>	<p>Margin Reports:</p> <ul style="list-style-type: none"> • Corporate Action Event Report (DWH0229) • Series Price Report (DWH0305) • IPO indicator (DWH0303) • Participant Margin Multiplier Report (DWH0081C) • Initial Margin Risk Parameter File (RPF01) <p>Default Fund Reports:</p> <ul style="list-style-type: none"> • Risk – Stress Testing Report (RMAST01) • Default Fund Requirement Report (RMADF01) • Stress Testing Risk Parameter Files (RPF02, RPF03, RPF04) <p>Comparison Guideline of Default Fund Reports</p>
<div style="border: 1px solid black; border-radius: 15px; padding: 10px; display: inline-block;"> <p>Details to be covered in the later slides</p> </div>	

- To practice **Margin and Stress Testing Simulation** via NGRM Online 

• CPs can now retrieve and study the [report specifications](#) and [user guides](#) of the above reports in [HKEX website](#).



Note: 1. reports and control files will be available for download within 10 calendar days after transmission.

Familiarisation Programme (Cont'd)

- Scope of Phase 2

6. **Default Fund Report Comparison guideline**, to facilitate CPs to understand the new reports and compare with the CCASS reports, will be available to retrieve via [HKEX website](#)

➤ Basic Contribution & Dynamic Contribution

CCASS – Statement of Default Fund Contributions (CCMDF02)

*** New CCASS Report upon business launch of NGRM ***

Basic Contribution & Dynamic Contribution in CCASS

- Existing CCASS report replaces Statement of Guarantee Fund Contribution (GFR608)

FIRM ID	PART ID	A/C TYPE	A/C NO
BF00001	B00001	HSE	0001

	HK\$
REQUIRED MINIMUM BASIC CONTRIBUTION	50,000.00
LESS: BALANCE BROUGHT FORWARD	69,000.00
AMOUNT OF MINIMUM BASIC CONTRIBUTION DUE FROM / (TO) YOUR COMPANY (NOTE 1)	(19,000.00)

REQUIRED ADDITIONAL BASIC CONTRIBUTION	30,000.00
LESS: BALANCE BROUGHT FORWARD	0.00
AMOUNT OF ADDITIONAL BASIC CONTRIBUTION DUE FROM / (TO) YOUR COMPANY (NOTE 1)	30,000.00

REQUIRED DYNAMIC CONTRIBUTION	2,768,500.00
LESS: BALANCE BROUGHT FORWARD	4,000,003.10
AMOUNT OF DYNAMIC CONTRIBUTION DUE FROM / (TO) YOUR COMPANY (NOTE 1)	(1,231,503.10)

ACCRUED INTEREST (NOTE 2)	0.00

NGRM – Default Fund Requirement Report (RMADF01)

Basic Contribution & Dynamic Contribution in NGRM

- New NGRM report shows the breakdowns of the Basic Contribution & Dynamic Contribution
- Note that depending on actual result, some CP could have no requirement on the Additional Basic Contribution Requirement

(R1) Batch	(R2) IDM	(R3) Create Time	(R4) Business Date	(R5) Clearing House	(R6) Exchange	(R7) Currency	(R8) Daily Stressed DF size	(R9) Dynamic Credit utilized by all CPs	(R10) Current DF Size + Dynamic Credit utilized by all CPs	(R11) DF Threshold	(R12) DF Predefined limit	(R20) Minimum Basic Contribution Requirement	(R21) Additional Basic Contribution Requirement	(R22) Dynamic Contribution Requirement	(R23) Dynamic Contribution Credit Utilized	(R24) Total DF Contribution Requirement	(R25) Daily EUL
1	321	2	20210301 12	20210301													
1	HKSCC	HK	HKD	2900000000	2600000000	6599990000	6600000000	3300000000									
2	Participant ID	Account	Participant Name	Currency	Default fund ID	Share %	Settlement Date	Minimum Basic Contribution Requirement	Additional Basic Contribution Requirement	Dynamic Contribution Requirement	Dynamic Contribution Credit Utilized	Total DF Contribution Requirement	Daily EUL				
2	B00001	MA1	B00001 PAR	HKD	HKSCC15	0.03365	20210301	50000	30000	3768500	1000000	2848500	1306335				

$$(R24) = (R20) + (R21) + (R22 - R23)$$

Familiarisation Programme (Cont'd)

- Scope of Phase 2

➤ Daily Expected Uncollateralized Loss (EUL) and Default Fund Add-on

CCASS – Guarantee Fund Risk Collateral Requirement Report (GFR806)

*** obsolete upon business launch of NGRM ***

Net Projected Loss (8)

- Net Projected Loss – replaced by Daily EUL under the new risk base model

Guarantee Fund Risk Collateral Requirement (10)

- GF Risk Collateral Requirement - replaced by “Default Fund Add-on” shown in RMAMR01 & RMAMR03 with breakdowns available in RMADF01

NGRM – Default Fund Requirement Report (RMADF01)

NGRM – MTM and Margin Requirement Report (RMAMR01)

Daily EUL (R18 in RMADF01)

- Guarantee Fund Net Projected Loss for Guarantee Fund Risk Collateral calculation, i.e. Stressed default loss net of its own applicable collaterals

Default Fund Add-on (R37 in RMAMR01 & R21 in RMAMR03)⁵

- Default Fund Add-on calculated based on new risk model, replaces Guarantee Fund Risk Collateral Requirement

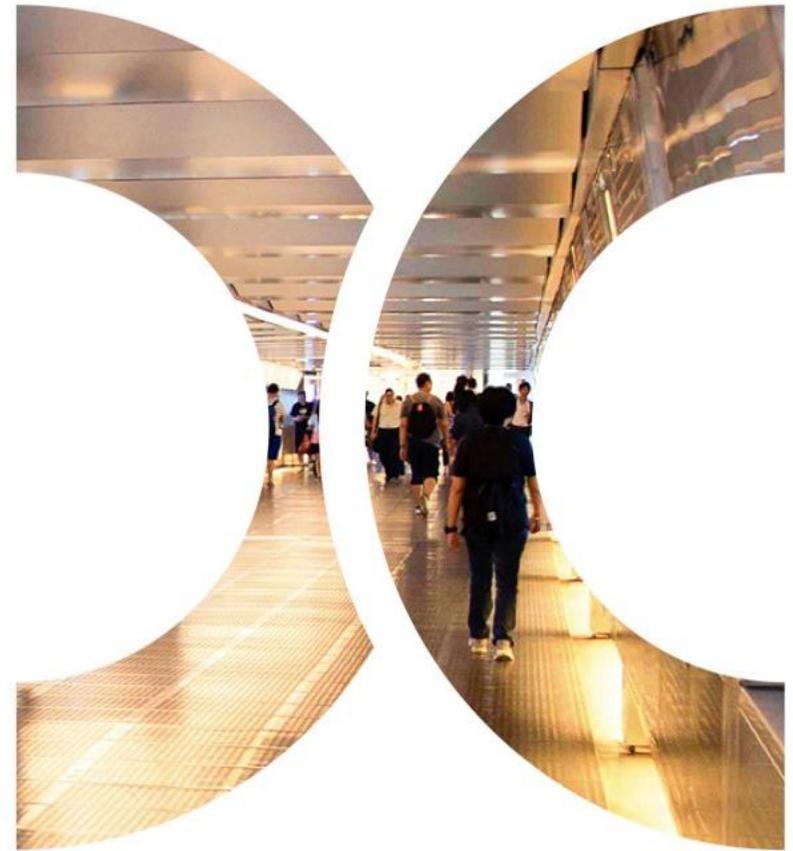
GFR806		HKSCC - GFCS	
GUARANTEE FUND RISK COLLATERAL REQUIREMENT REPORT			
DATE : 01MAR21			
PARTICIPANT ID : B00003		PARTICIPANT NAME : B00003 PARTICIPANT FULL NAME	
(7) GF RISK COLLATERAL REQUIREMENT CALCULATION STATUS	:	TRIGGERED	
(8) NET PROJECTED LOSS	:	3,700,000,000.00	
(9) GF RISK PREDEFINED LIMIT	:	3,300,000,000.00	
(10) GF RISK COLLATERAL REQUIREMENT	:	400,000,000.00	
(11) GF RISK COLLATERAL ON HAND	:	0.00	
(12) GF RISK COLLATERAL TO BE COLLECTED / (REFUNDED)	:	400,000,000.00	
(13) DAILY STRESSED GF SIZE	:	6,700,000,000.00	
(14) CURRENT GF SIZE + DYNAMIC CREDIT UTILIZED BY ALL CPS	:	6,600,000,000.00	
(15) DYNAMIC CREDIT UTILIZED BY ALL CPS	:	260,000,000.00	
(16) GF THRESHOLD	:	6,600,000,000.00	

RMADF01		E	F	G	H	I	J	K	L	M	N
1	Batch	Create									
2	321	20210301									
1 (R5)	Clearing House	(R8) Daily Stressed DF size	(R9) Dynamic Credit utilized by all CPS	(R10) Current DF Size + Dynamic Credit	(R11) DF Threshold	(R12) Predefined limit					
3											
4	1 HKSCC	6700000000	260000000	6600000000	6600000000	3300000000					
2 (R13)	Participant ID	(R16) Currency	(R17) Default fund ID	(R18) Share %	(R19) Settlement Date	(R20) Minimum Basic Contribution Requirement	(R21) Additional Basic Contribution Requirement	(R22) Dynamic Contribution Requirement before credit	(R23) Dynamic Contribution Requirement Utilized	(R24) Total DF Contribution Requirement	(R25) Daily EUL
5											
6	2 B00002	HKD	HKSCC15	0.03365	20210301	100000	130000	150000000	1000000	149230000	3700000000
7											

RMAMR01		AH	AI	AJ	AK
1	Requirement	(R35) Total EOT MTM and Margin Requirement to be collected through SEOCH	(R36) Total MTM and Margin Requirement to be collected through HKSCC	(R37) Default Fund Add-on	
2		6937196	30000	6907196	400000000



MORE COMING SOON



Important Information

INFORMATION

The NGRM Familiarisation Programme and related materials are available on the HKEX website, please visit the website regularly for the latest information:

https://www.hkex.com.hk/Services/Next-Generation-Post-Trade-Programme/NextGen-Risk-Management?sc_lang=en



CONTACT

For NGRM related enquiries, please contact us via:

- Email: NG_PostTrade@hkex.com.hk
- NGRM Hotline: 2211 6828





**HKSCC Default Fund
("DF") Sizing and
Allocation under Next
Generation Risk Models
("NG Risk Models")**

August 2021

Agenda

- Background
- Purpose of Default Fund (“DF”)
- Overview of DF Sizing and Allocation
 1. Determine the Daily Expected Uncollateralized Loss (“EUL”)
 2. Determine the DF Size based on EUL
 3. Determine Pro-rata % of each Clearing Participant (“CP”) for DF Allocation
- Key Takeaway Points



Background

- Similar to the Initial Margin ("IM") impact analysis provided in Familiarisation Programme phase 1, Hong Kong Securities Clearing Company Limited ("HKSCC") will provide Clearing Participants ("CPs") the individual Default Fund ("DF")* contribution impact analysis from 9 August 2021#, so that CPs can assess the potential impact on DF contribution under Next Generation Risk Models ("NG Risk Models").
- Compared with IM, CP's own DF contribution is more complex as it depends on both the size and allocation among all HKSCC CPs. HKSCC therefore prepares this deck to recap the DF sizing and allocation mechanism, aiming at facilitating CPs' understanding on upcoming DF contribution impact analysis.
- Please note that the scope of DF sizing and allocation in this deck is confined to HK cash equity securities market only to highlight the key changes under NG Risk Models.
- If you would like to understand the stress testing framework under NG Risk Models, please be advised to visit HKEX website for the briefing materials at https://www.hkex.com.hk/Services/Next-Generation-Post-Trade-Programme/NextGen-Risk-Management?sc_lang=en.



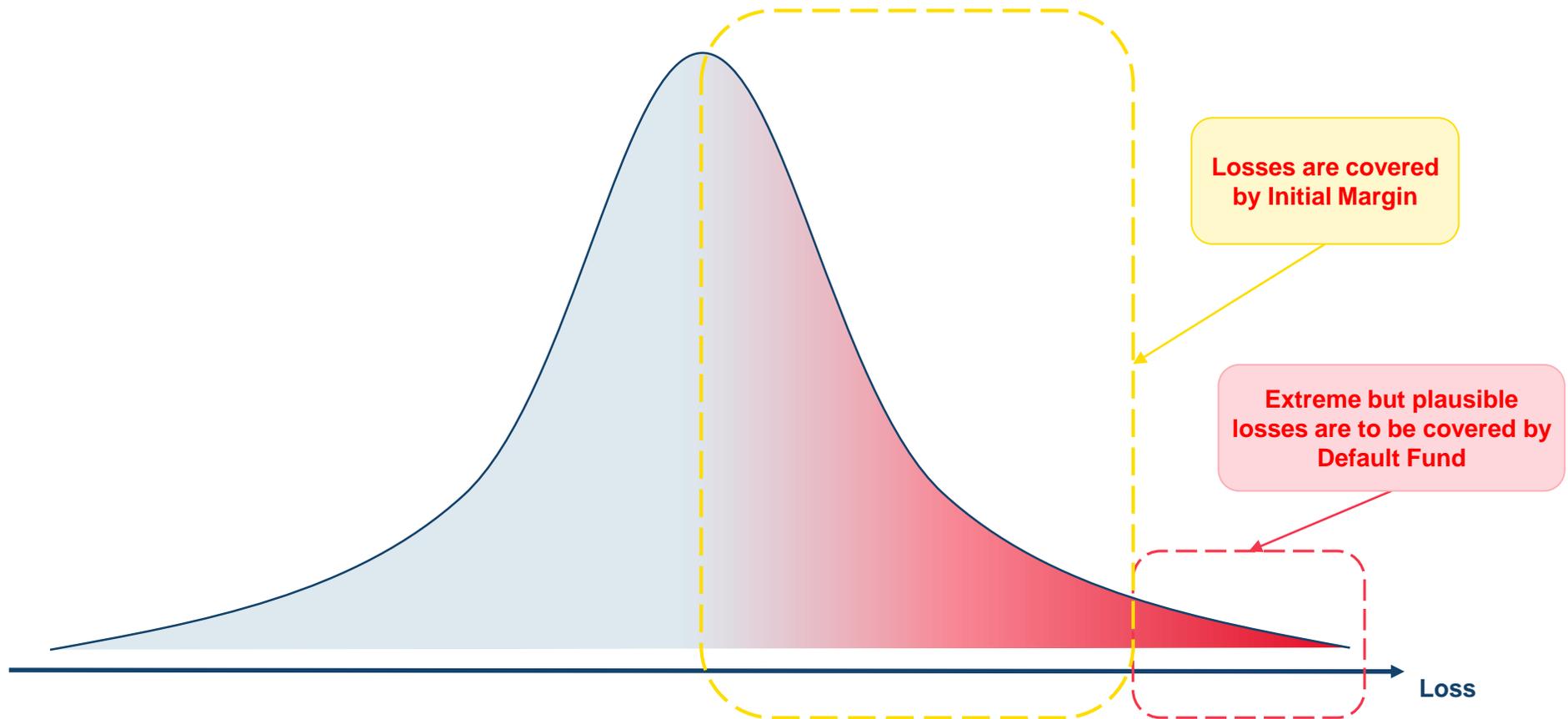
* Also known as Guarantee Fund ("GF")

During the Familiarisation Programme, HKSCC will firstly provide analysis based on May and June 2021 data and further update the results from time to time.



Purpose of Default Fund (“DF”)

- Initial margin collected by HKSCC aims at mitigating the losses of each individual CP during daily market movement.
- The DF acts as a compliment to cover the tail loss of CP’s portfolio when the CP defaults and IM is insufficient to cover under extreme but plausible scenarios.



Overview of DF Sizing and Allocation

The key steps, features and changes between the current model and NG Risk Models are outlined as follows for DF sizing and allocation:

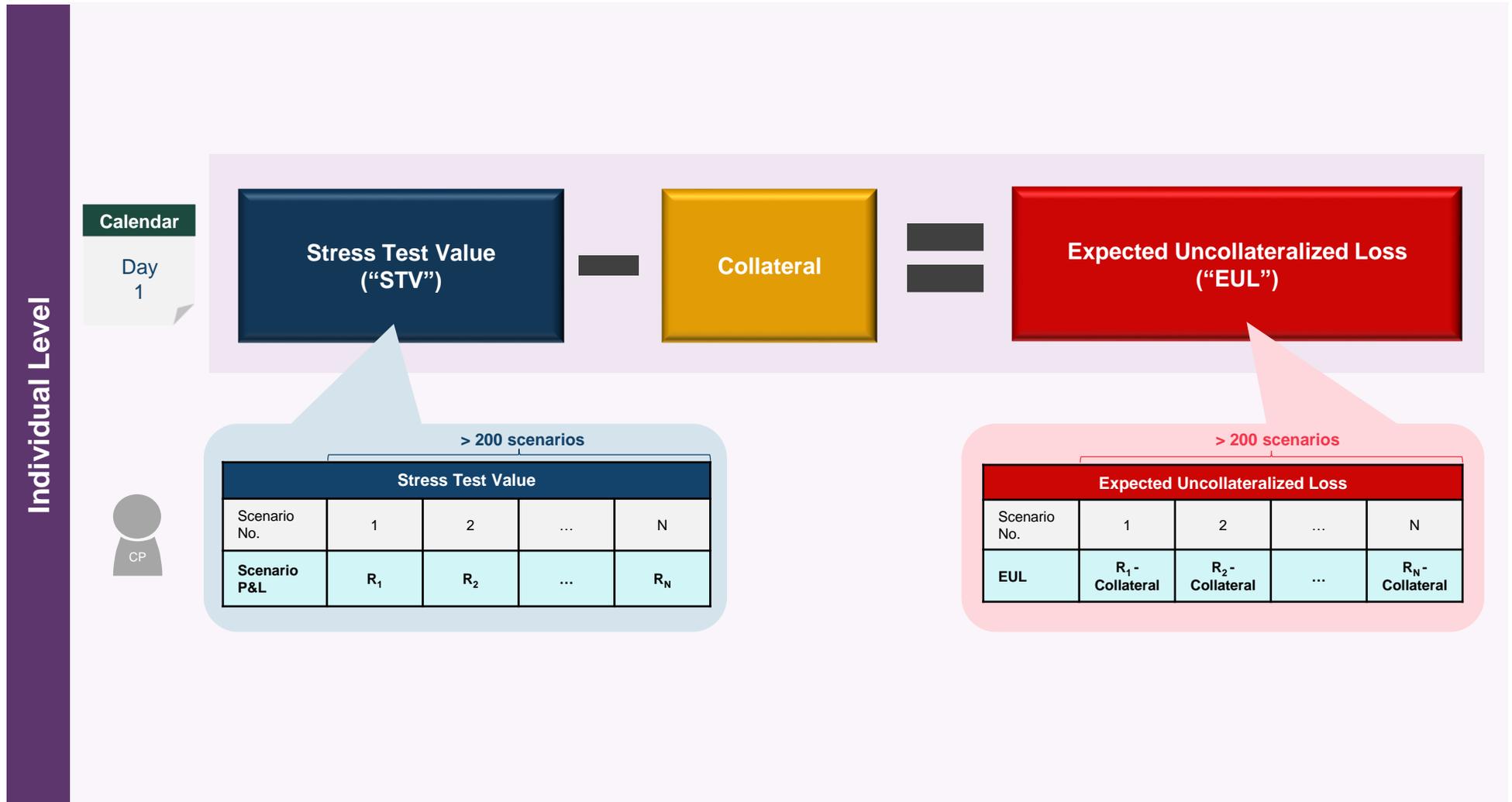
Step	Description	Key Features Involved	Current Model	NG Risk Models
1	Determine the daily Expected Uncollateralized Loss ("EUL")	Stress scenarios	<ul style="list-style-type: none"> ■ 2 hypothetical systemic risk scenarios (proxy of HSI movement) applied to all securities <ul style="list-style-type: none"> ➢ Market up scenario ➢ Market down scenario 	<ul style="list-style-type: none"> ■ > 200 product-specific scenarios applied to each security <ul style="list-style-type: none"> ➢ Historical, Hypothetical, Theoretical, Idiosyncratic
2	Determine the DF size based on EUL	DF sizing assumption	<ul style="list-style-type: none"> ■ 1st + 5th largest CP exposure ■ 60-day look-back period 	<ul style="list-style-type: none"> ■ 1st + 5th largest CP exposure ■ 60-day look-back period
3	Determine pro-rata % of each CP for DF allocation	DF allocation methodology	<ul style="list-style-type: none"> ■ CNS position based 	<ul style="list-style-type: none"> ■ Risk based i.e. stress test value net of its own collateral (EUL)

No Change



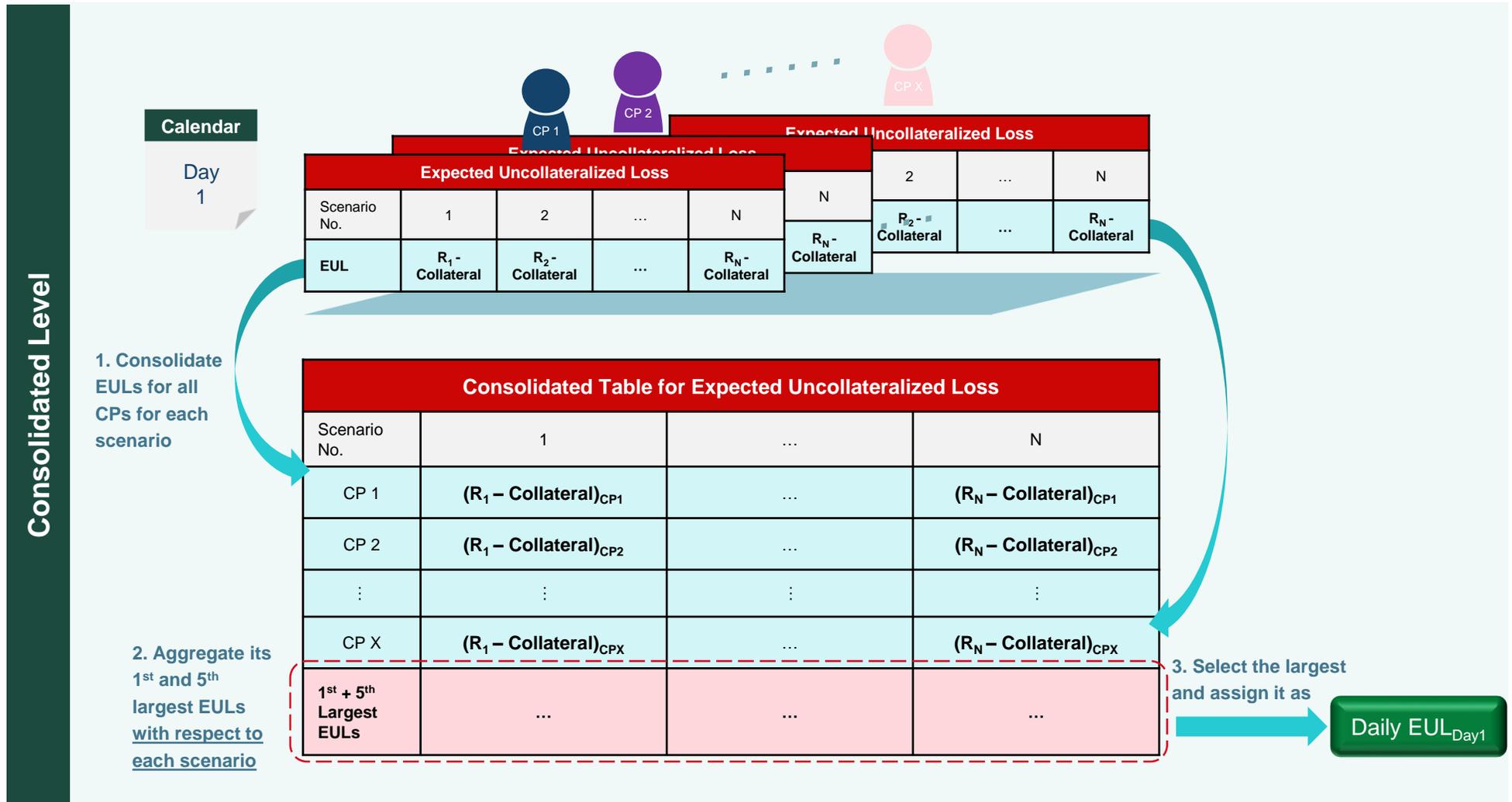
1. Daily Expected Uncollateralized Loss (“EUL”) Determination

For each CP, daily EUL per scenario will be determined as the difference between (i) Stress Test Value; and (ii) its own collateral pledged in HKSCC.



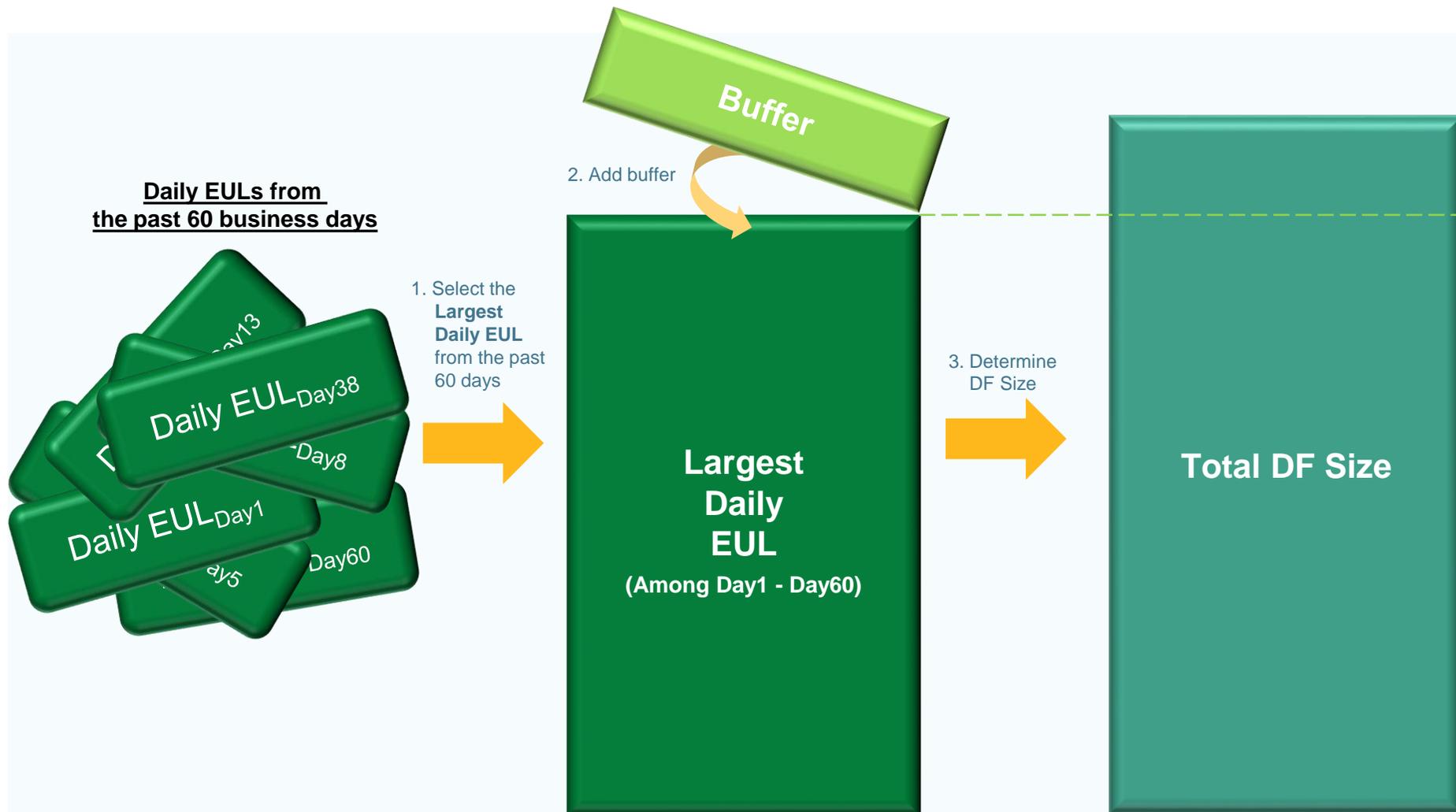
1. Daily Expected Uncollateralized Loss (“EUL”) Determination (Cont’d)

Subsequently, each CP’s daily EUL per scenario will be used for determining daily EUL. The 1st and 5th largest EULs with respect to each scenario will be aggregated, of which the largest one among all scenarios will be assigned as “Daily EUL” on that particular day.



2. Default Fund (“DF”) Size Determination based on EUL

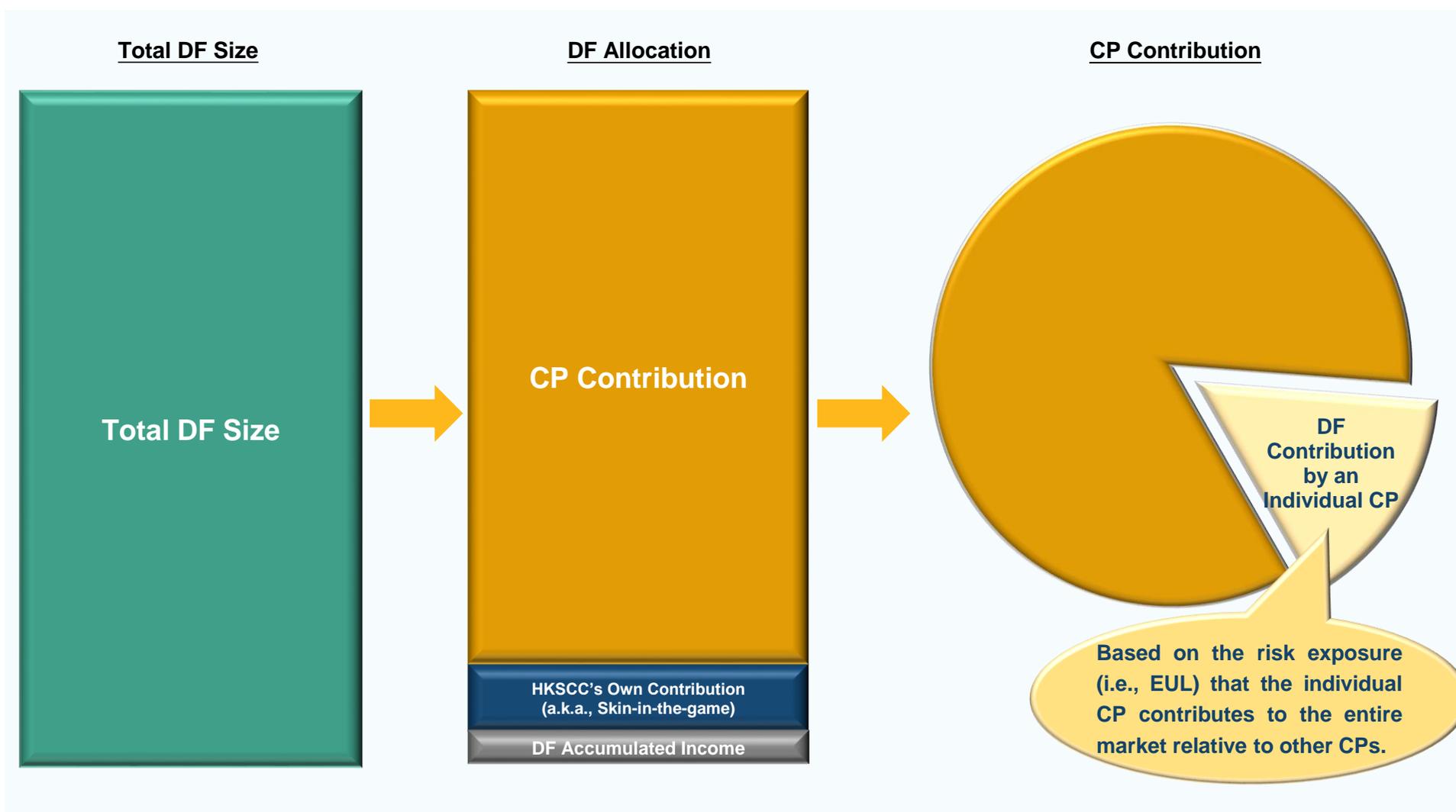
DF Size will be determined by the largest daily EUL from the past 60 business days with a buffer¹.



¹ The buffer will be changed from 10% to 15% effective on 9 August 2021. Please note that the buffer will be subject to review and may be changed from time to time.

3. Pro-rata % Determination of each CP for DF Allocation¹

- DF Size will be shared by (i) CP Contribution², (ii) HKSCC's Own Contribution (a.k.a., Skin-in-the-game) and (iii) DF Accumulated Income.
- In CP Contribution², it will be further allocated according to the DF contribution by individual CP relative to other CPs.



¹ Subject to SFC official approval
² CPs' Contribution is in HKD cash

Key Takeaway Points

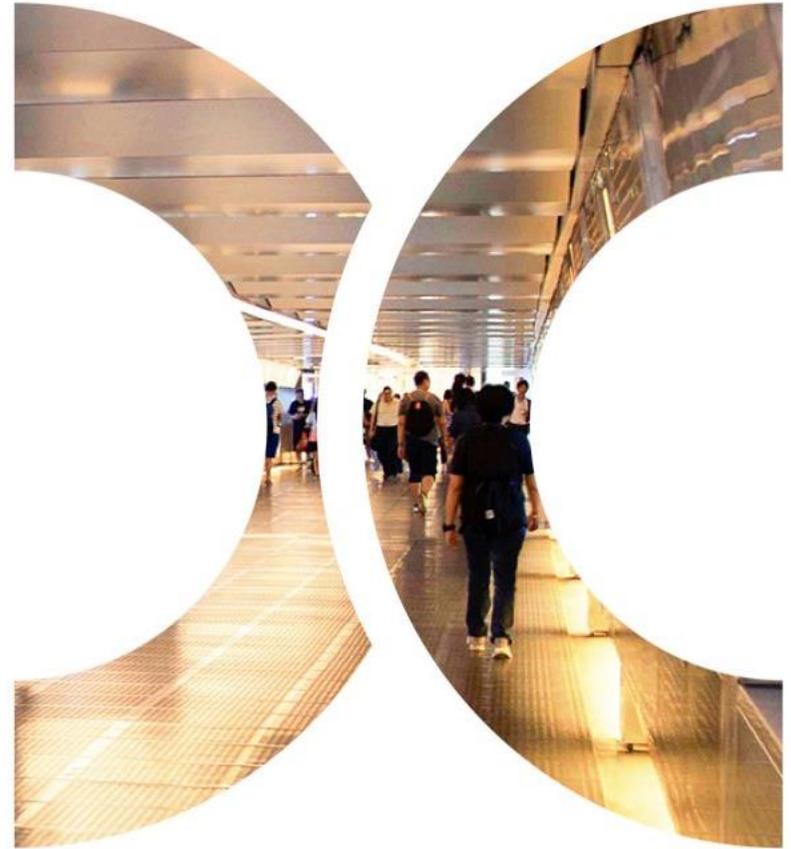
- 1. DF aims at covering the loss under extreme but plausible market conditions.**
- 2. Upon the implementation of NGRM, changes in CPs' DF contribution could be driven by:**
 - The change in total DF size – the EUL* of the 1st and 5th largest CPs calculated based on more comprehensive stress scenarios under the NG Risk Models.**
 - The change in DF allocation – based on a more risk-based approach# (i.e., EUL that the individual CP contributes to the entire market relative to other CPs).**

** The largest daily EUL in the past 60 business days*

In contrast to CNS position based approach used under the current model



Thank You



Disclaimer

The information contained in this presentation is for general informational purposes only and does not constitute an offer, solicitation, invitation or recommendation to subscribe for or purchase any securities or other products or to provide any investment advice of any kind. This presentation is not directed at, and is not intended for distribution to or use by, any person or entity in any jurisdiction or country where such distribution or use would be contrary to law or regulation or which would subject Hong Kong Exchanges and Clearing Limited (“HKEX”) to any registration requirement within such jurisdiction or country.

This presentation contains forward-looking statements which are based on the current expectations, estimates, projections, beliefs and assumptions of HKEX about the businesses and the markets in which it and its subsidiaries operate or aspires to operate in. These forward-looking statements are not guarantees of future performance and are subject to market risk, uncertainties and factors beyond the control of HKEX. Therefore, actual outcomes and returns may differ materially from the assumptions made and the statements contained in this presentation. The implementation of these initiatives is subject to a number of external factors, including government policy, regulatory approval, the behaviour of market participants, competitive developments and, where relevant, the identification of and successful entry into agreements with potential business partners. As such, there is no guarantee that the initiatives described herein will be implemented, or that they will be implemented in the form and timeframe described herein.

Although the information contained in this presentation is obtained or compiled from sources believed to be reliable, HKEX does not guarantee the accuracy, validity, timeliness or completeness of the information or data for any particular purpose, and shall not accept any responsibility for, or be liable for, errors, omissions or other inaccuracies in the information or for the consequences thereof. The information set out in this presentation is provided on an “as is” and “as available” basis and may be amended or changed. It is not a substitute for professional advice which takes account of your specific circumstances and nothing in this document constitutes legal advice. HKEX shall not be responsible or liable for any loss or damage, directly or indirectly, arising from the use of or reliance upon any information provided in this presentation.

