

# CME Conversion for CAD CDOR Cleared Swaps

January 2024

# Subject to Discussion and Regulatory Review

The contents of this document are for informational purposes only and provide an overview of CME's planned approach to the CAD CDOR transition for CME cleared swaps. The plan is subject to change at any time without prior notice. Any implementation of the points discussed is subject to regulatory review and to any necessary internal and external approvals.

# Agenda

## 1 Introduction to Conversion Plan

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## 2 ISDA Fallback Pricing Protocol

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## 3 Primary Conversion Methodology

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## 4 Operational Processing

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# Fallback Approach for CME Cleared CAD CDOR Swaps

## CAD CDOR Phase-out

On May 16, 2022, Refinitiv Benchmark Services Limited (RBSL) announced that the calculation and publication of all CDOR tenors will cease immediately after their final publication on June 28, 2024. At the same time, the Ontario Securities Commission and the Autorité des marchés financiers issued decisions authorizing RBSL to cease the publication of CDOR.

## ISDA Fallbacks

ISDA confirmed that the RBSL's announcement constitutes an "Index Cessation Event" under the ISDA Fallbacks Supplement and Fallback Protocol:

- As a result, on July 2, 2024, affected Canadian Dollar (CAD) OTC IRS will fall back to the relevant credit and spread adjusted fallback CORRA rate, the relevant ISDA "Index Cessation Effective Date" (ICED)
- ISDA's approach would compound realized CORRA daily, and add a credit spread in implementing the fallback. The final compounded rate is available only at the end of the interest period

## CME Plan

For background, CME incorporated the ISDA IBOR fallbacks in January 2021 and the ISDA 2021 Definitions in October 2022. Based on the positive outcomes achieved from other recent benchmark transitions to risk-free-rates (RFRs), including for USD LIBOR cleared swaps, CME plans to leverage a similar playbook whereby any legacy in-scope CDOR swaps will be converted into CORRA overnight index swaps (OIS) prior to the June 2024 cessation event. This conversion of CAD CDOR swaps benefits the marketplace by:

- ✓ Creation of a single transparent liquidity pool for trading CORRA swaps
- ✓ Providing participants certainty that "legacy" and "new" contracts would be fungible with one another upon transition to the CORRA fallback
- ✓ Market standard OIS are widely supported by participants and market infrastructure; this approach removes the need to operationally support "Observation Period Shift" defined in ISDA Fallbacks

# Conversion Plan for CME Cleared CAD CDOR Swaps

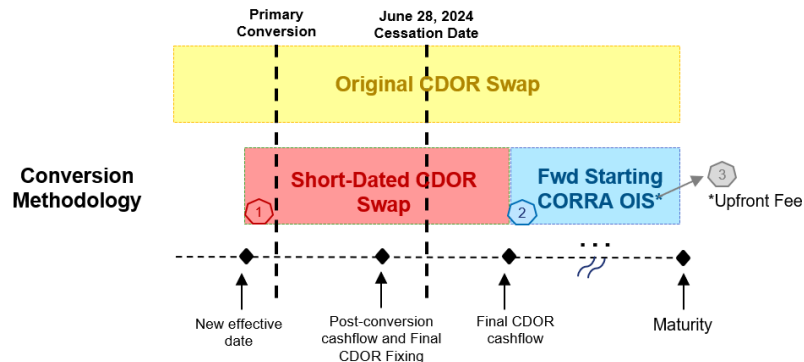
## CAD CDOR Conversion Approach:

Based on feedback from market participants, CME is implementing the same general approach to our CAD conversion process as used for USD LIBOR swaps in Q2 2023.

For each in scope cleared CDOR swap, CME will be replacing it with two swaps:

- 1) A short-dated CDOR swap for any representative CDOR fixings that settle following the primary conversion
- 2) A forward starting CORRA OIS, and
- 3) Upfront fee settled on the CORRA OIS to account for any valuation differences between the legacy and new swaps

Although this methodology will result in an increased number of line items and notional outstanding in the short term, it provides the flexibility to run the conversion process ahead of the index cessation, and the CDOR replacement swaps will mature within a few months of the cessation.



# Conversion Plan for CME Cleared CAD CDOR Swaps

## Summary

**Scope:** All cleared CAD CDOR swaps that contain fixings beyond June 28, 2024

### Target Conversion Timing:

- **Primary CAD Swap Conversion (May 17, 2024; June 7 contingency):** All cleared CAD CDOR swaps that contain fixings beyond June 28, 2024
- **Secondary CAD Swap Conversion (July 2, 2024):** All new CAD CDOR swaps cleared following the primary conversion that contain fixings beyond June 28, 2024

**Conversion Process:** CME plans to convert all in scope CAD CDOR swap products to short-dated CDOR and CORRA replacement swaps where:

- ✓ Each CDOR swap is converted into corresponding **short-dated CDOR and CORRA replacement swaps**;

*Resultant swap(s) will differ slightly by economic terms. Operational process will be a close-out (termination) of the original swap and establishment of new replacement contracts – however, legal characterization will be as an amendment of the original contract. The following sections will provide further details.*

- ✓ Key economics are copied over to both the Short-dated CDOR and CORRA replacement swaps;
- ✓ ISDA Fallback Spread Adjustment is applied to the floating leg of the CORRA replacement swap;
- ✓ A cash compensation is applied as an upfront fee to the CORRA replacement swap;
- ✓ CME will maintain the representative CDOR coupons through the conversion process, restating these accrual periods as Short-dated CDOR replacement swaps

# Conversion Plan for CME Cleared CAD CDOR Swaps

## Process for Determining Cash Compensation

$$\text{Cash Compensation} = \text{Adj NPV}^* \text{ of CDOR Swap} - \text{Adj NPV of all Replacement Swaps}$$

### Pricing CAD CDOR Swaps on Conversion Date:

*Considerations:* Ensure pricing of the CDOR swaps is fair and is not subject to manipulation to CAD CDOR marks

*Plan:* Price the CAD CDOR swaps using ISDA Fallback Pricing Protocol (Supplement 70)

### Convert CAD CDOR Swaps to corresponding short-dated CDOR and CORRA replacement swaps:

*Considerations:* Reduce the differences in cashflow amounts for the projected cashflows

Ensure the converted swaps are maintaining the representative CDOR coupons that are unpaid

*Plan:* Account for the ISDA Fallback Spread Adj on the CORRA leg to ensure minimal difference in future cashflows

Based on the swap effective date, book a **short-dated CDOR replacement swap** to account for all representative fixings.

### Pricing short-dated CDOR and CORRA replacement swaps on relevant conversion date:

Price the replacement swaps on relevant conversion date consistent with current ISDA Fallback Pricing Protocol

\* *Adjusted NPV = NPV of Swap – Present Value of any fees or coupons due to settle the following business day*

# Conversion Plan for CME Cleared CAD CDOR Swaps

## Conversion Process Considerations

### **Maintain CDOR fixings that occur between conversion date and Index Cessation Effective Date (ICED):**

- ✓ Allows for all in scope CDOR swaps to be converted on a single conversion date (the Primary Conversion Date) and settles all representative CDOR payments
- ✓ Accounts for the compounded floating rates seen on the majority of CDOR swaps

### **Basis Swaps and FRAs:**

- ✓ CME does not support CAD basis swaps, so no splitting event is required
- ✓ CME has ceased clearing CAD CDOR FRAs with effective dates after June 30, 2024, removing FRAs from the conversion scope. CAD CDOR FRAs with effective dates prior this date remain eligible for clearing.

### **CAD IMM**

- ✓ Based on feedback from market participants, CME plans to convert IMM CAD CDOR swaps into IMM CAD CORRA utilizing the standard CME conversion methodology
- ✓ CME will communicate additional details on its plan to address the IMM CAD roll convention as further resources are published



# Conversion Plan for CME Cleared CAD CDOR Swaps

## Conversion Process Considerations

### **Continued support for CAD CDOR swaps clearing between the Primary Conversion Date and ICED:**

- ✓ CME will continue to accept spot, seasoned, and forward starting CAD CDOR swaps during this period
- ✓ All CAD CDOR swaps cleared following the primary conversion cycle and prior to index cessation will be converted on the Secondary CAD Swap Conversion Date

### **Post-ICED support of CAD CDOR Swaps / Bilateral Swaption expiries for clearing:**

- ✓ CME will accept CAD CDOR swaps for clearing after the Index Cessation Effective Date if they are spot or forward starting
- ✓ These daily conversion cycles will result in one replacement CORRA Swap for each original CAD CDOR swap

# Agenda

- 1 Introduction to Conversion Plan  
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- 2 ISDA Fallback Pricing Protocol**  
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- 3 Primary Conversion Methodology  
.....
- 4 Operational Processing

# Fallback Pricing Approach for CME Cleared CAD CDOR Swaps

## ISDA Fallback Pricing Protocol: *Computing all-in Fallback IBOR (CDOR) Rate*

*This mechanism will be used for computing the projected IBOR Forward Rate on conversion date*

The Fallback reference rate  $FF$ , with respect to a IBOR tenor  $f$  and Record/Fixing Date  $t$  is computed as:

$$FF_{f,t} = ARR_{f,t} + SA_{f,t}$$

where  $ARR_{f,t}$  is the Adjusted Risk-Free Rate,  $SA_{f,t}$  is the Fallback spread fixed by Bloomberg for IBOR tenor

$$ARR_{f,t} = \frac{\text{DayCount}_I}{\text{DayCount}_{RR}} \times \frac{1}{\delta_{S_{f,t}, E_{f,t}}} \times \left[ \left( \prod_{u \in AP_{f,t}} (1 + RFR_u \times \delta_{u,u+1}) \right) - 1 \right]$$

where:

$\text{DayCount}_I$  is day-count convention for IBOR (CDOR) index

$\text{DayCount}_{RR}$  is day-count convention for Reference Rate (CORRA) index

$S_{f,t}$  is the accrual start date for IBOR tenor

$E_{f,t}$  is the accrual end date for IBOR tenor

$\delta_{A,B}$  is the day count fraction for the Reference Rate

$AP_{f,t}$  is the accrual period for Reference Rate compounding

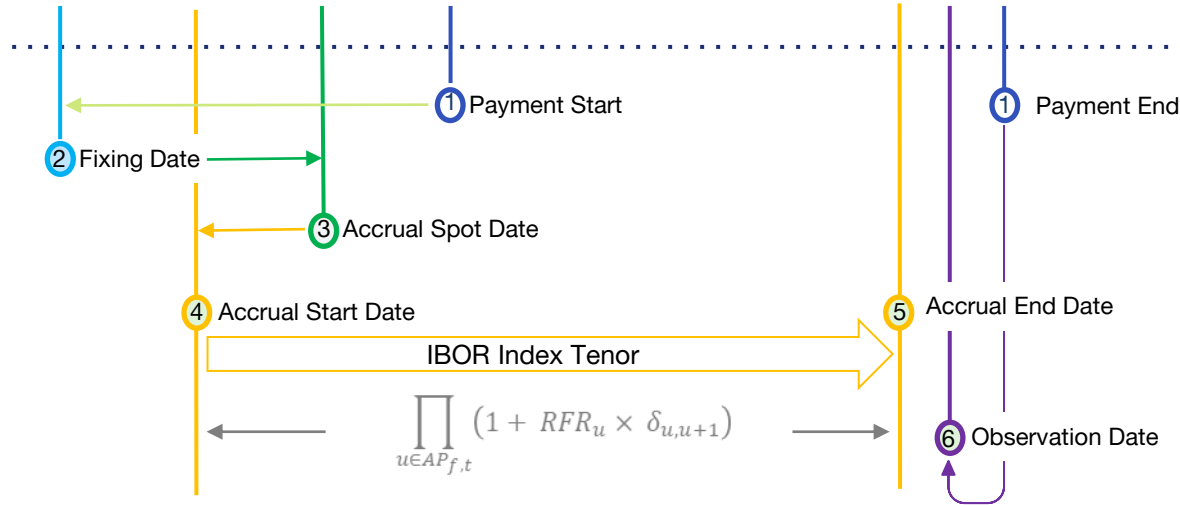
$u$  is the business day within accrual period defined by Reference Rate holiday calendar

Details of the Fallback Rate adjustment are found here:

[https://assets.bbhub.io/professional/sites/10/IBOR-Fallback-Rate-Adjustments-Rule-Book\\_V3\\_Dec2021.pdf](https://assets.bbhub.io/professional/sites/10/IBOR-Fallback-Rate-Adjustments-Rule-Book_V3_Dec2021.pdf)

# Fallback Pricing Approach for CME Cleared CAD CDOR Swaps

**ISDA Fallback Pricing Protocol:** *Determining Accrual period for RFR compounding*



Details of the Fallback Rate adjustment: [https://assets.bbhub.io/professional/sites/10/IBOR-Fallback-Rate-Adjustments-Rule-Book\\_V3\\_Dec2021.pdf](https://assets.bbhub.io/professional/sites/10/IBOR-Fallback-Rate-Adjustments-Rule-Book_V3_Dec2021.pdf)

- 1 Compute the Payment Start Date and Payment End Date based on trade attributes
- 2 Compute IBOR Fixing date from Payment Start Date using fixing offset, calendar and business convention from trade attributes
- 3 Compute Accrual Spot Date as Spot Lag number of business days from Fixing Date using calendar and Following convention
- 4 Compute Accrual Start Date as 2 business days before Accrual Spot Date on RFR calendar using Preceding convention
- 5 Compute Accrual End Date by adding IBOR Index tenor from Accrual Start Date
- 6 Compute Observation Date as 2 business days before Payment Date on trade payment calendar using Preceding convention. Ensure the Accrual End date is on or before Observation Date. If not, then adjust the Fixing Date backward until the condition is satisfied

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2 ISDA Fallback Pricing Protocol

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**3 Primary Conversion Methodology**

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4 Operational Processing

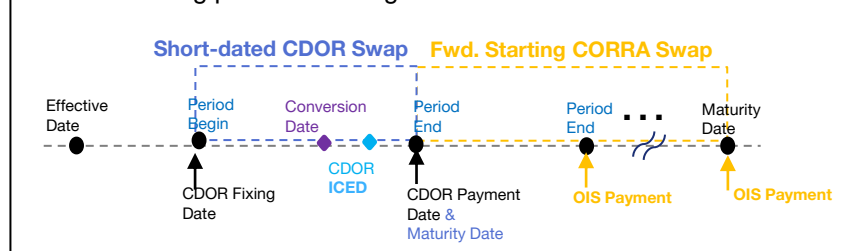
# Conversion Methodology

For all in-scope CAD CDOR swaps, CME will employ a **similar** approach to that used for USD LIBOR settings in Q2 2023. CME will book two replacement swaps for each **seasoned** CDOR swap where:

- The original CDOR swap is converted (operational termination, legal amendment)
- A **Short-dated CDOR replacement swap** settles all fixings published prior to the index cessation
- A **Forward starting CORRA replacement swap** settles all remaining cash flows and the cash compensation fee

**1) Short-dated CDOR replacement swap** – Settles representative CDOR floating period coupon(s). Start/end dates match CDOR floating period(s) with unsettled coupons.

**2) Forward starting CORRA replacement swap** – all future periods' cash flows are covered by the CORRA OIS. Start date equals the start of the floating period following ICED.



# Conversion Methodology

## Additional Considerations for Seasoned Swaps

- CME will book Short-dated CDOR replacement swaps to settle any CDOR fixings published prior to the index cessation. Fixed cash flows and compounded float cash flows on the replacement swaps **may not match** the original swap in some cases (see examples)
- **Compounding Swaps:** CME will respect the representative CDOR fixings of seasoned compounding swaps. A short-dated CDOR swap is booked to settle the representative CDOR floating and corresponding fixed accruals. The CORRA replacement swap will be effective at the end of the next floating coupon period and the daily compounded rate is applied to all future floating periods
  - Fixed and float cash flow dates on the Short-dated CDOR replacement swap **may not match** the original CDOR swap. Initial stubs may be included on the CORRA OIS to settle non-representative CDOR compounding periods

## Considerations for Forward Starting Swaps

- The conversion methodology for **forward starting swaps will remain unchanged** from the previous USD LIBOR conversion:
  - CORRA replacement swaps will maintain the effective dates, maturity dates and fixed leg economic terms (excluding payment offset)
  - A single compensation fee is included and paid the following Toronto business day
  - 1-day payment offset is added to both legs of the CORRA replacement swap, consistent with market standard OIS conventions

# Conversion Methodology Changes from USD-LIBOR Conversion

The below methodology changes were implemented to book replacement CORRA swaps that reference standard economic attributes. Using standard trade attributes ensures that the replacement CORRA swaps are supported by execution venues and back office systems.

- **Fixed Leg Day Counts**

- Short-dated CDOR swaps: preserved from the original swap
- CORRA OIS: **Defaulted to the market standard convention “Act/365.fixed”**

- **Additional Payment Calendars**: All CAD swaps are required to have the Toronto (CATO) calendar for payments and fixings. Additional calendars are defined as any other calendars listed on the original CDOR swap.

- Short-dated CDOR swaps: preserved from the original swap
- CORRA OIS: **Defaulted to the market standard convention of Toronto (CATO). No additional calendars are carried over.**



# Conversion Methodologies for Special Cases

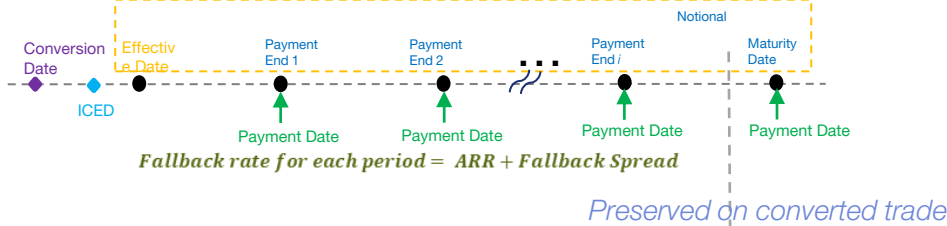
- **Stub Periods:** Stubs require special processing when creating replacement swaps as there are different methods used to specify the original floating rate
  - Short-dated CDOR swaps: Stub periods will reference the 3M CDOR index
  - CORRA OIS: Forward starting stub periods will maintain the period start and end dates with a daily compounded overnight rate
- **Swaps in Final Floating Period:** All CDOR swaps in their final floating period (last fixing is representative but not settled) will be left to mature and will not undergo conversion

# Methodology for Converting CAD CDOR Swaps to CORRA Swaps

**Vanilla Forward Starting Swap:** Effective Date of the Swap is after the Index Cessation Effective Date (ICED)

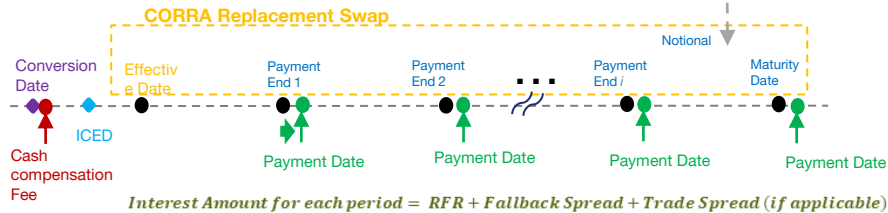
## Pricing and Termination of CDOR Swap

Compute payment period start/end date, payment date and fixing date using trade attributes



## Converted Trade Attributes

Compute payment period start/end date using trade attributes same as CDOR Trade



## Conversion Methodology

- ✓ Apply ISDA Fallback pricing to each of the fixing dates. Imply compounded ARR from the bootstrapped CORRA curve.
- ✓ Price the CDOR leg as priced currently using the Fallback rate implied for each reset
- ✓ Effective date, maturity date, notional, payment frequency, and direction are preserved from CDOR swap
- ✓ Override the Payment Offset to standard CORRA convention on both fixed and floating legs
- ✓ Override the below attributes to market standard CORRA OIS conventions on floating leg:
  - Index Name and Tenor
  - Fixing Offset, fixing calendar, and adjustments
  - ISDA fallback spread plus the original trade spread are added to compounded CORRA leg
- ✓ Upfront fee is added to CORRA OIS to move the cash compensation

# Methodology for Converting CAD CDOR Swaps to CORRA Swaps

## Ex. 1) Forward starting CDOR swap converted to CORRA OIS

Conversion Date = May 17, 2024

CAD 3M-CDOR IRS	
Currency	CAD
Notional	50,000,000
Trade Date	3/15/2024
Effective Date	9/18/2024
Maturity Date	9/18/2025
Fixed Direction	Payer
Fixed Rate	4.55%
Fixed Leg Payment Freq.	6M
Fixed Leg Payment Offset	n/a
Floating Rate Index	CAD-CDOR
Float Leg Index Tenor	3M
Float Leg Payment Freq.	6M
Float Leg Pay Adj Calendar	CATO
Float Leg Payment Offset	n/a
Float Leg Compounding Method	Flat
Reset Relative To	Period Begin
Float Leg Fixing Adj Calendar	CATO
Date Roll	18
Status	Terminated



CORRA OIS Replacement	
Currency	CAD
Notional	50,000,000
Trade Date	3/15/2024
Effective Date	9/18/2024
Maturity Date	9/18/2025
Fixed Direction	Payer
Fixed Rate	4.55%
Fixed Leg Payment Freq.	6M
Fixed Leg Payment Offset	1 Day
Floating Rate Index	CAD-CORRA-OIS Compound
Float Leg Index Tenor	1 Day
Float Leg Payment Freq.	6M
Float Leg Pay Adj Calendar	CATO
Float Leg Payment Offset	1 Day
Float Leg Compounding Method	ISDA OIS Compounding
Reset Relative To	Period End
Float Leg Fixing Adj Calendar	CATO
Date Roll	18
Status	Cleared
Upfront Fee	Cash compensation
Upfront Fee Payment Date	5/21/2024
Float Leg Spread	Fixed spread adjustment (0.32138%)

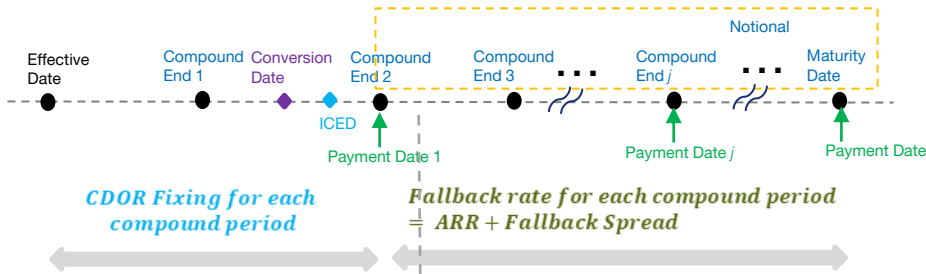
- = Economic preserved
- = Economic changed/added

# Methodology for Converting CAD CDOR Swaps to CORRA Swaps

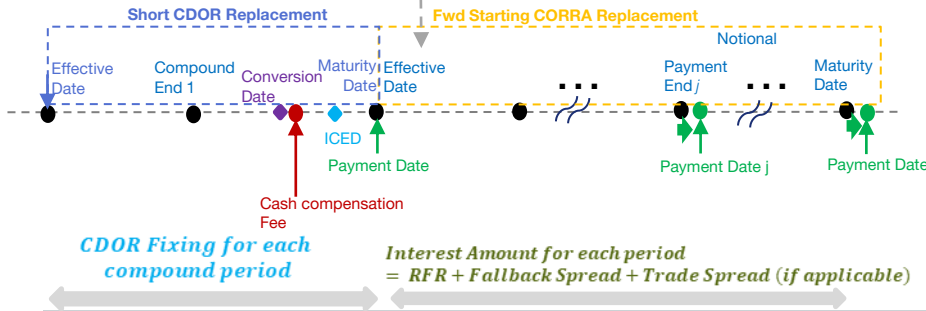
**Conversion of Seasoned Compounding Swap:** Trade has start date prior to ICED and has compounded float leg

## Pricing and Termination of CDOR Swap

Pricing and other calculation same as previous slides



## Converted Trade Attributes



## Conversion Methodology

- ✓ Book a forward starting CORRA swap with Effective date set as the next compound period start date immediately following ICED. Note the payment accruals are preserved. CORRA by default compounds every 1D.
- ✓ Notional for the CORRA swap is the same as original CDOR swap
- ✓ Change floating spread to ISDA Fallback spread + Trade spread (if applicable)
- ✓ Any representative but not paid CDOR or fixed coupon payments are settled as a short-dated CDOR replacement swap. The coupons are settled at the end of the last representative compounding period. All subsequent periods are added to the CORRA replacement swap.
  - The CDOR replacement swap will accrue all representative CDOR fixings inclusive of any trade spread using the compounding convention on the original CDOR swap
  - ISDA Fallback spread will NOT be added to the CDOR replacement swap

# Methodology for Converting CAD CDOR Swaps to CORRA Swaps

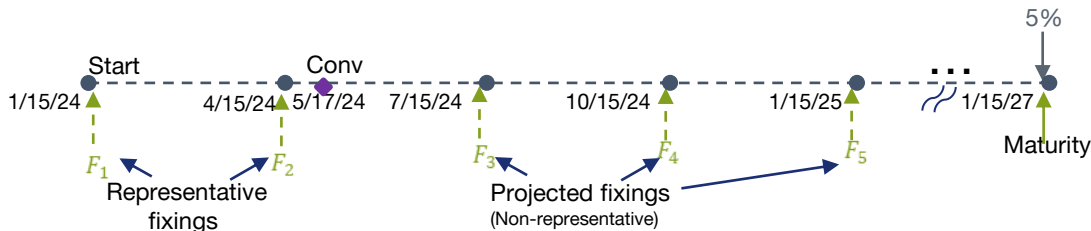
**Example 2: Compounding swap when last representative CDOR payment date matches the fixed payment date**

## Original Swap:

**3M CDOR vs 5% IRS**

Start= 1/15/24; Maturity= 1/15/27

Fixed Pays 6m, Float Rec 6m



## Replacement Swap 1:

3M CDOR vs 5% IRS

Start= 1/15/24; Maturity= 7/15/24

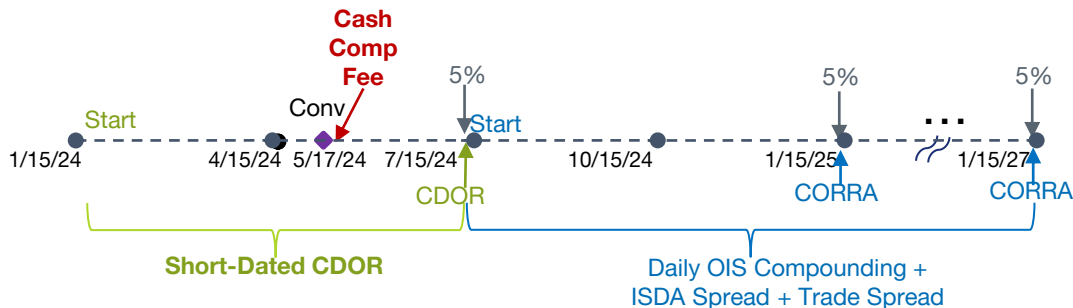
Fixed Pays 6m, Float Rec 6m  
with 3m compounding

## Replacement Swap 2:

CORRA vs 5% OIS

Start= 7/15/24; Maturity= 1/15/27

Fixed Pays 6m, Float Rec 6m  
with ISDA OIS compounding



# Methodology for Converting CAD CDOR Swaps to CORRA Swaps

Ex. 2 cont) **Seasoned** CDOR swap when last representative CDOR payment date matches the fixed payment date

*Conversion Date = May 17, 2024*

CAD 3M CDOR IRS	
Currency	CAD
Notional	200,000,000
Trade Date	1/12/2024
Effective Date	1/15/2024
Maturity Date	1/15/2027
Fixed Direction	Payer
Fixed Rate	5.00%
Fixed Leg Payment Freq.	6M
Fixed Leg Payment Offset	n/a
Floating Rate Index	CAD-CDOR
Float Leg Index Tenor	3M
Float Leg Payment Freq.	6M
Float Leg Pay Adj Calendar	CATO
Float Leg Pay Offset	n/a
Float Leg Compounding Method	Flat
Reset Relative To	Begin Period
Float Leg Fixing Adj Calendar	CATO
Date Roll	15
Status	Terminated

- = Economic preserved  
 = Economic changed/added



CAD 3M CDOR IRS – Short Replacement 1	
Product Type	IRS
Notional	200,000,000
Effective Date	1/15/2024
Maturity Date	7/15/2024
Upfront Fee	None
Fixed Leg Payment Freq.	6M
Float/Fixed Leg	Other economics carried over

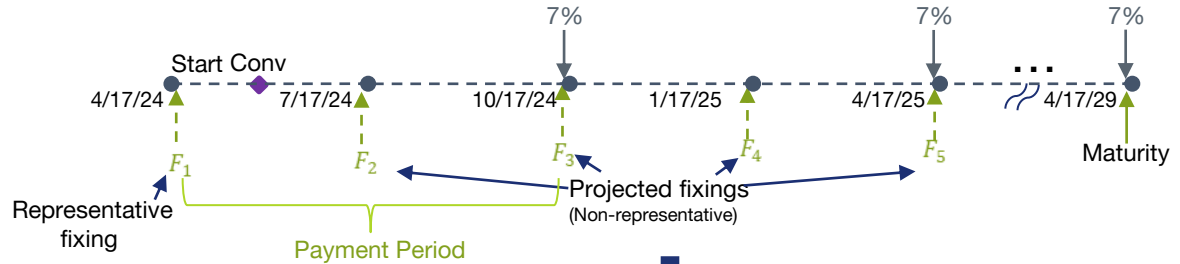
CORRA OIS – Forward Starting Replacement 2	
Currency	CAD
Notional	200,000,000
Trade Date	1/12/2024
Effective Date	7/15/2024
Maturity Date	1/15/2027
Fixed Direction	Payer
Fixed Rate	5.00%
Fixed Leg Payment Freq.	6M
Fixed Leg Payment Offset	1 Day
Floating Rate Index	CAD-CORRA-OIS Compound
Float Leg Index Tenor	1 Day
Float Leg Payment Freq.	6M
Float Leg Pay Adj Calendar	CATO
Date Roll	15
Float Leg Payment Offset	1 Day
Stub Type	None
Upfront Fee	Cash compensation fee
Upfront Fee Payment Date	5/21/2024
Float Leg Spread	Fixed spread adjustment (0.32138%)

# Methodology for Converting CAD CDOR Swaps to CORRA Swaps

## Example 3: Compounding swaps when last representative CDOR payment date does not match fixed payment

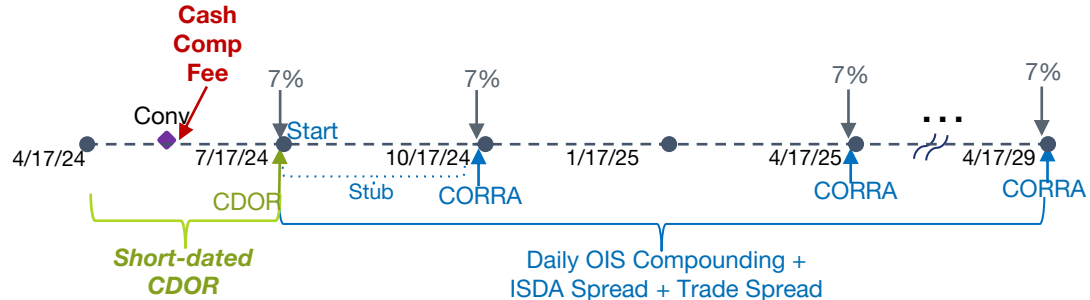
### Original CDOR Swap:

3M CDOR vs 7% fixed IRS  
 Start= 4/17/24; Maturity = 4/17/29  
 Fixed Pays 6M, Float Receives 6M  
 with 3M compounding



### Replacement Swap 1:

CDOR vs 7% fixed IRS  
 Start= 4/17/24; Maturity = 7/17/24  
 Fixed Pays 3m, Float Rec 3m  
 Float has no compounding



### Replacement Swap 2:

CORRA vs 7% fixed OIS  
 Start= 7/15/24; Maturity = 4/17/29  
 Fixed Pays 6M, Float Receives 6M  
 Stub = Short Initial  
 First Reg. Period start date = 10/17/24

# Methodology for Converting CAD CDOR Swaps to CORRA Swaps

Ex. 3 cont) **Seasoned** CDOR swap when last representative CDOR payment date does not match fixed payment date

Conversion Date = May 17, 2024

CAD 3M CDOR IRS	
Currency	CAD
Notional	300,000,000
Trade Date	4/15/2024
Effective Date	4/17/2024
Maturity Date	4/17/2029
Fixed Direction	Payer
Fixed Rate	7.00%
Fixed Leg Payment Freq.	6M
Fixed Leg Payment Offset	n/a
Floating Rate Index	CAD-CDOR
Float Leg Index Tenor	3M
Float Leg Payment Freq.	6M
Float Leg Pay Adj Calendar	CATO
Float Leg Pay Offset	n/a
Float Leg Compounding Method	Flat
Reset Relative To	Begin Period
Float Leg Fixing Adj Calendar	CATO
Date Roll	17
Status	Terminated



CAD 3M CDOR IRS – Short Replacement 1	
Product Type	IRS
Notional	300,000,000
Effective Date	4/17/2024 (start of current period)
Maturity Date	7/17/2024 (end of period with last CDOR fixing)
Upfront Fee	None
Float Leg Payment Freq.	3M
Fixed Leg Payment Freq.	3M
Float Leg Compounding Method	None
CORRA OIS – Forward Starting Replacement 2	
Currency	CAD
Notional	300,000,000
Trade Date	4/15/2024
Effective Date	7/17/2024
Maturity Date	4/17/2029
Fixed Direction	Payer
Fixed Rate	7.00%
Fixed Leg Payment Freq.	6M
Fixed Leg Payment Offset	1 Day
Fixed Leg Stub Type	Short Initial
Floating Rate Index	CAD-CORRA-OIS Compound
First Regular Period Start Date	10/17/2024
Float Leg Index Tenor	1 Day
Float Leg Payment Freq.	6M
Float Leg Pay Adj Calendar	CATO
Date Roll	17
Float Leg Payment Offset	1 Day
Upfront Fee	Cash compensation
Upfront Fee Payment Date	5/21/2024
Float Leg Spread	Fixed spread adjustment (0.32138%)

- = Economic preserved
- = Economic changed/added

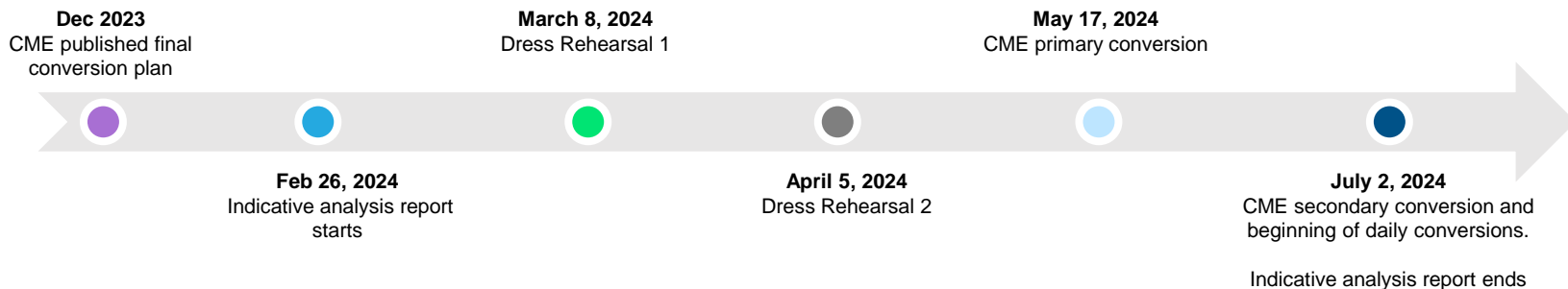


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- 4 **Operational Processing**

# Operational Processing: Dress Rehearsal Timeline

Note: all dates are targets and subject to change



- **New Release (test environment) clean up:** To provide a “clean slate” for testing, CME will terminate all cleared CAD CDOR swaps three weeks prior to each Dress Rehearsal: Feb 16 for DR1, March 15 for DR2
- **Dress Rehearsals:** CME by default will load test portfolios for clearing firms prior to each rehearsal. Firms can opt out and load their own test trades
- **Daily conversion testing:** Begins in New Release the business day following Dress Rehearsal 2 and continues indefinitely

# Operational Processing: End-of-Day Timeline

## Tentative End-of-Day Timeline for CAD CDOR Conversion on relevant conversion date

**7:00 pm ET:** CME end-of-day close. CME will begin a full clearing cycle with conversion processing included

**7:05 – 7:15 pm ET:** CME completes netting/blending for cleared CDOR swaps. This process finalizes the swap population for conversion. Corresponding trade messages are sent to clearing firms.

**7:15 – 7:25 pm ET:** CME publishes indicative analysis reports which contain the actual cash compensation amounts on the conversion day.

**7:25 – 7:50 pm ET:** Conversion processing begins to terminate the original CDOR swaps and book Short CDOR and CORRA replacement swaps. All corresponding termination and clearing confirmed trade messages are sent to clearing firms.

- CME runs settlements to compute VM and PAA on all swaps

**8:00 – 8:30 pm ET:** CME publishes the end-of-day IRS Trade Register showing all new and terminated trades

**Conversion Date + 1 (following Toronto Business day) – CAD compensation fees are settled**

**Please note:**

- All times are estimates and may vary on each conversion date (UAT processing times are ~1 hour earlier)
- Beginning July 2, 2024, the conversion processing will continue daily on Toronto business days

# Operational Processing: Sequencing of Conversion Events

## Steps to Convert CDOR Swaps to Replacement Short CDOR and CORRA OIS

The below conversion steps are performed by CME during the initial CAD CDOR conversion **and** daily after index cessation

### Step 1: Price CDOR Swaps on relevant Conversion Date

- Eligible CDOR swaps are valued using the ISDA Fallback Pricing Protocol (Supplement 70)

### Step 2: Convert CDOR Swaps to Replacement Swaps

- New CORRA OIS replacement swaps are created, and the fixed spread adjustment is applied to the CORRA leg
- Where applicable, fixed and representative CDOR floating accruals are booked as short-dated CAD CDOR replacement swaps

### Step 3: Price Short-dated CDOR and CORRA Replacement Swaps on Conversion Date

- End-of-day pricing curves are leveraged to price all replacement swaps (CDOR and OIS)

### Step 4: Compute Cash Compensation and Add as Upfront Fee

- Cash compensation is calculated to account for NPV change between the terminated CDOR swap and replacement swaps
- All compensation amounts are settled as upfront fees on the replacement CORRA OIS
  - *Cash Compensation = Adj. NPV of CDOR Swap – Adj. NPV of all Replacement Swaps*

### Step 5: Publish all Messaging and Reporting to Clearing Firms

- Termination messages are sent for all terminated CDOR swaps with INDEX\_CONVERSION “terminating event” i
- Clearing Confirmed messages are sent for all replacement swaps with INDEX\_CONVERSION “originating event”
- IRS Trade Register report is published with all terminated and new swaps, as well as relevant upfront fees

# Operational Processing: Variation Margin and Cash Compensation

## Variation Margin and Cash Compensation Example (IRS Trade Register view)

Value Date	Cleared Trade ID	Floating Rate Index	Status	NPV	NPV Adj.*	Previous NPV Adj.	Variation	Upfront Payment	FEE_TYPE	Payment Date	Net Cash Flow
05/17/2024	144223	CAD-CDOR	TERMINATED	0	0	18,000.00	-18,000.00	-	-	-	-18,000.00
05/17/2024	126466	CAD-CDOR	CLEARED	5,000.00	5,000.00	0	5,000.00	-	-	-	5,000.00
05/17/2024	126467	CAD-CORRA-OIS Compound	CLEARED	14,000.00	13,000.00	0	13,000.00	1,000.00	UPFRONT_FEE	05/21/2024	14,000.00

Cash Compensation	CDOR Swap Valuation (5/17)	19,000.00	Replacement CDOR Valuation + CORRA OIS Valuation	5,000.00 + 13,000.00	PnL Change	-1,000.00
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Value Date	Cleared Trade ID	Floating Rate Index	Status	NPV	NPV Adj.	Previous NPV Adj.	Variation	Upfront Payment	FEE_TYPE	Payment Date	Net Cash Flow
05/21/2024	126466	CAD-CDOR	CLEARED	5,500.00	5,500.00	5,000.00	500.00	-	-	-	500.00
05/21/2024	126467	CAD-CORRA-OIS Compound	CLEARED	13,500.00	13,500.00	13,000.00	500.00	-	-	-	500.00

### Calculation Breakdown (May 17, Conversion Date)

Original CDOR Swap VM = NPV Adj. – Previous NPV Adj.

$$= 0 - 18,000.00 = -18,000.00$$

PnL Change = [NPV Adj. (CORRA OIS) + NPV Adj. (Repl. CDOR swap)] - NPV Adj. (CDOR swap)

$$= (13,000.00 + 5,000.00) - 19,000.00 = -1,000.00$$

Compensation Amount = (NPV Adj. of CDOR Swap – [NPV Adj. (Repl. CDOR Swap) + NPV Adj. (CORRA OIS)])

$$= 19,000.00 - (5,000.00 + 13,000.00) = 1,000.00$$

NPV Adj. (CORRA OIS) = NPV – Upfront Payment

$$= 14,000.00 - (1,000.00) = 13,000.00$$

\* NPV Adj. reflects the value of the swap removing any fee payments to be made the following business day

**Note:** In the event of multiple replacement swaps, all Adj NPVs are added to calculate the cash compensation

# Operational Processing: Clearing Firm Messaging

## FpML Messaging (Key Elements)

For each converted CDOR swap, a termination message will be sent to clearing firms along with clearing confirmed message(s) for the replacement swap(s):

### CDOR Swap Termination

Trade IDs:

```
<partyTradeIdentifier>
  <partyReference href="clearing_service"/>
  <tradeId tradeIdScheme="cme_trade_id">144223</tradeId>
  <tradeId tradeIdScheme="client_trade_id">144223-1</tradeId>
  <tradeId tradeIdScheme="platform_trade_id">12528374</tradeId>
  <tradeId tradeIdScheme="platform_side_id">12528374-1</tradeId>
  <tradeId tradeIdScheme="block_trade_id">18449413</tradeId>
</partyTradeIdentifier>
```

- A subset of trade IDs on the original CDOR swap will be carried over to the replacement swaps.
- The CME Trade ID and USI/UTI are not carried over.
- Client IDs of replacement swaps are carried over and appended with “T” on CDOR swaps and “R” on CORRA swaps.

### Short-Dated CDOR Replacement Swap

Trade IDs:

```
<partyTradeIdentifier>
  <partyReference href="clearing_service"/>
  <tradeId tradeIdScheme="cme_trade_id">126466</tradeId>
  <tradeId tradeIdScheme="client_trade_id">144223-1T</tradeId>
  <tradeId tradeIdScheme="platform_trade_id">12528374</tradeId>
  <tradeId tradeIdScheme="platform_side_id">12528374-1</tradeId>
  <tradeId tradeIdScheme="block_trade_id">18449413</tradeId>
</partyTradeIdentifier>
```

### Replacement CORRA Swap

```
<partyTradeIdentifier>
  <partyReference href="clearing_service"/>
  <tradeId tradeIdScheme="cme_trade_id">126467</tradeId>
  <tradeId tradeIdScheme="client_trade_id">144223-1R</tradeId>
  <tradeId tradeIdScheme="platform_trade_id">12528374</tradeId>
  <tradeId tradeIdScheme="platform_side_id">12528374-1</tradeId>
  <tradeId tradeIdScheme="block_trade_id">18449413</tradeId>
</partyTradeIdentifier>
```

# Operational Processing: Clearing Firm Messaging

## FpML Messaging (Key Elements)

For each converted CDOR swap, a termination message will be sent to clearing firms along with clearing confirmed message(s) for the replacement swap(s):

### CDOR Swap Termination

#### - Terminating Event and Status

```
<tradeDate>2024-01-02</tradeDate>
<clearedDate>2024-01-02</clearedDate>
<cme:terminatingEvent>INDEX_CONVERSION</cme:terminatingEvent>
<cme:status>TERMINATED</cme:status>
```

#### - Floating Index

```
<floatingRateIndex>CAD-CDOR</floatingRateIndex>
<indexTenor>
  <periodMultiplier>3</periodMultiplier>
  <period>M</period>
```

#### - Terminated and replacement trade(s) are linked through the history element:

```
<cme:history>
  <cme:replacementTradeId tradeIdScheme="cme_trade_id">126466</cme:replacementTradeId>
  <cme:replacementTradeId tradeIdScheme="cme_trade_id">126467</cme:replacementTradeId>
  <cme:originalTradeId tradeIdScheme="cme_trade_id">144223</cme:originalTradeId>
</cme:history>
```

### Replacement Swaps

#### - Originating Event and Status

```
<tradeDate>2024-01-02</tradeDate>
<clearedDate>2024-05-17</clearedDate>
<cme:originatingEvent>INDEX_CONVERSION</cme:originatingEvent>
<cme:status>CLEARED</cme:status>
```

#### - Floating Index

```
<floatingRateIndex>CAD-CDOR</floatingRateIndex>
<indexTenor>
  <periodMultiplier>3</periodMultiplier>
  <period>M</period>

<floatingRateCalculation>
  <floatingRateIndex>CAD-CORRA-OIS Compound</floatingRateIndex>
```

#### - Original CDOR swap is referenced through the history element on each replacement swap:

```
<cme:history>
  <cme:originalTradeId tradeIdScheme="cme_trade_id">144223</cme:originalTradeId>
</cme:history>
```

# Operational Processing: Trade Register Reporting

## IRS Trade Register on Conversion Date

### Terminated CDOR Swaps:

- All terminated swaps are shown on the conversion date in a “TERMINATED” status
- Impacted swaps can be identified by “INDEX\_CONVERSION” value in the column “TERMINATING\_EVENT”

Value Date	Cleared Trade ID	Platform ID	Client ID	CONVERTED_TRADE_ID	LEG2_INDEX	PRODUCT_TYPE	Status	NPV	Upfront Payment	FEE_TYPE	TERMINATING_EVENT
05/17/2024	144223	12528374	144223-1	-	CAD-CDOR	SWAP	TERMINATED	-	-	-	INDEX_CONVERSION

### Replacement CDOR Swaps and CORRA OIS:

- All replacement swaps are shown on the conversion date in a “CLEARED” status
- Cash compensation amounts are shown as upfront fees
- Replacement swaps can be identified by “INDEX\_CONVERSION” value in the column “ORIGINATING\_EVENT”
- “CONVERTED\_TRADE\_ID” column will show the CME Trade ID of the original trade that was converted (**primary link**)

Value Date	Cleared Trade ID	Platform ID	Client ID	CONVERTED_TRADE_ID	LEG2_INDEX	PRODUCT_TYPE	Status	NPV	Upfront Payment	FEE_TYPE	ORIGINATING_EVENT
05/17/2024	126466	12528374	144223-1T	144223	CAD-CDOR	SWAP	CLEARED	5,000	-	-	INDEX_CONVERSION
05/17/2024	126467	12528374	144223-1R	144223	CAD-CORRA-OIS Compound	OIS	CLEARED	14,000	1,000	UPFRONT_FEE	INDEX_CONVERSION



# Operational Processing: Indicative Analysis Reporting

## Report Specification

- Report shows the NPV and key economic terms of each replacement swap, and the cash compensation at the trade level. Format remains unchanged from prior conversion except for new fields noted on last slide.
- Initial publication of "indicative reports" is targeted for **Feb 26, 2024**
- Report uses CME valuation curves for projected CDOR fixings and to value all swaps. Actual values will vary and are not known until the time of conversion
- CSV formatted report delivered to clearing firm and client sFTP folders
- All parties receiving Trade Registers today, who have CAD CDOR exposure, will receive this report

### Publication Details:

- Report values assume the conversion dates as listed in this deck
- Trade population includes production portfolios only
- Report figures are updated on Toronto business days
- Any CAD CDOR swap that has been converted, or is in the final floating period, are not included
- Each row shows identifiers of the original swap and then the trade details of a replacement swap. Swaps converted to two replacement swaps are shown on two separate rows
- File name:** IRS\_IBORCONV\_FFF\_YYYYMMDD\_EOD.csv

## Original Swap Identifiers & Cash Compensation Fields

Column Header	Description	Sample Value
Value Date	Business Date	03/02/2024
Position Account ID	Id of the Position (Clearing) Account	3TTNN7
Cleared Trade ID	CME Trade ID of Original CDOR swap	9355844
Platform ID	SEF/Platform ID	7897868G9H
Client ID	Client reference ID	1423523IS
REG_TRADE_ID	USI	CCCIRS9355844
Firm ID	3-digit Clearing Firm ID	998
ORIGIN	HOUS or CUST	CUST
PRODUCT_TYPE	Type of IRS product	SWAP; OIS
Currency	3-digit currency code	CAD
NPV_NEW_INDEX	NPV of Replacement Swap	2,266.34
NPV_PRIOR_INDEX	NPV of Original CDOR Swap	2,244.28
NPV_ADJ_NEW_INDEX	ADJ NPV of Replacement Swap	2,266.34
NPV_ADJ_PRIOR_INDEX	ADJ NPV of Original CDOR Swap	2,244.28
NPV_ADJ_DIFF	Replacement Swap(s) ADJ NPV minus Original CDOR ADJ NPV	22.06
OFFSET_ADJ_AMT	Cash Compensation Amount / Original CDOR ADJ NPV minus Replacement Swap(s) ADJ NPV	-22.06
UTI	Universal Trade Identifier	NCHDOP39CCCIRS19711099
...	...	...

➤ See next slide for replacement swap economics

**Note:** The OFFSET\_ADJ\_AMT may not always be equal and opposite to the NPV\_ADJ\_DIFF due to coupon(s) banking the following business day on the original CDOR swap

# Operational Processing: Indicative Analysis Reporting

## Report Specification (summary fields shown)

### Short CDOR and Replacement CORRA Swap Terms – Summary & Leg 1

Column Header (Cont.)	Description	Sample Value
Effective Date	Start date of the Replacement swap	07/15/2024
Maturity Date	Maturity date of the Replacement swap	07/15/2029
Notional	Notional of the Replacement swap;	36,856,000.00
Direction	Direction of the Replacement swap from the position account's perspective	P
Fixed Rate	Fixed rate of the Replacement swap	0.05112
LEG1_TYPE	Fixed/floating leg of the Replacement swap	FIXED
LEG1_START_DATE_ADJ_BUS_DAY_CONV	Business day convention applied to the Effective Date of the Replacement swap	NONE
LEG1_START_DATE_ADJ_CAL	Calendar(s) applied to the Effective Date of the Replacement swap	CATO
LEG1_PAY_FREQ	Coupon payment frequency applied to the Replacement swap	6M
LEG1_DAYCOUNT	Day count convention applied to the Replacement swap	ACT/365.FIXED
LEG1_CALC_FREQ	Calculation (accrual) frequency applied to the Replacement swap	3M
LEG1_ROLL_CONV	Roll convention applied to the Replacement swap	15
LEG1_STUB_TYPE	Type of stub applied to the Replacement swap	Short Initial
LEG1_PAYMENT_DAYS_OFFSET	Number of business days the coupon settlement is delayed after the period end date for the Replacement swap	1D
LEG1_NEXT_ACCRUED	Accrued interest of fixed leg	1000.00

### Short CDOR and Replacement CORRA Swap Terms – Leg 2

Column Header (Cont.)	Description	Sample Value
LEG2_TYPE	Fixed/floating leg of the Replacement swap	FLOAT
LEG2_START_DATE_ADJ_BUS_DAY_CONV	Business day convention applied to the Effective Date of the Replacement swap	NONE
LEG2_START_DATE_ADJ_CAL	Calendar(s) applied to the Effective Date of the Replacement swap	CATO
LEG2_PAY_FREQ	Coupon pay frequency applied to the Replacement swap	6M
LEG2_DAYCOUNT	Day count convention applied to the Replacement swap	ACT/365.FIXED
LEG2_CALC_FREQ	Calculation (accrual) frequency applied to the Replacement swap	6M
LEG2_INDEX	Floating index (FRO) assigned to the Replacement swap	CAD-CORRA-OIS Compound; CAD-CDOR
LEG2_FIXING_DATE_BUS_DAY_CONV	Business day convention applied to the fixing date of the Replacement swap	PRECEDING
LEG2_FIXING_DATE_CAL	Holiday calendar(s) applied to the fixing date of the Replacement swap	CATO
LEG2_ROLL_CONV	Roll convention applied to the Replacement swap	15
LEG2_SPREAD	Spread adjustment applied to the Replacement swap	0.32138
LEG2_STUB_TYPE	Type of stub applied to the Replacement swap	Short Initial
LEG2_PAYMENT_DAYS_OFFSET	Number of business days the coupon settlement is delayed after the period end date for the Replacement swap	1D
FEE_AMOUNT	The representative CDOR or Fixed coupon that is added to the Replacement swap as an upfront fee	2,500.25
FEE_PAYMENT_DATE	Payment date of the representative CDOR or Fixed coupon that is added to the Replacement swap as an upfront fee	5/21/2024
LEG2_NEXT_ACCRUED	Accrued interest of floating leg	1000.00

# Operational Processing: Indicative Analysis Reporting

## Report Specification – New Fields!

### Short CDOR and Replacement CORRA Swap Terms – Summary & Leg 1

Column Header (Cont.)	Description	Sample Value
LEG1_MAT_DATE_ADJ_BUS_DATE_CONV	<b>New field</b> - Adjustments to Maturity Date	MODFOLLOWING
LEG1_MAT_DATE_ADJ_CAL	<b>New field</b> - Calendars to use for MAT DATE Adjustment	CATO
LEG1_CALC_PER_ADJ_BUS_DAY_CONV	<b>New field</b> - Business day convention for calculation Period date adjustments	MODFOLLOWING
LEG1_CALC_PER_ADJ_CAL	<b>New field</b> - Calendars to use for calculation period date adjustment	CATO
LEG1_NOTIONAL_TYPE	<b>New field</b> - Displays the type of notional schedule for Leg 1: • Bullet or Schedule	Bullet
CONVERTED_TRADE_ID	<b>New field</b> - ID of original CDOR swap; applicable to INDEX_CONVERSION trades only	14853775

### Short CDOR and Replacement CORRA Swap Terms – Leg 2

Column Header (Cont.)	Description	Sample Value
LEG2_MAT_DATE_ADJ_BUS_DATE_CONV	<b>New field</b> - adjustments to Maturity Date	MODFOLLOWING
LEG2_MAT_DATE_ADJ_CALENDAR	<b>New field</b> - Calendars to use for MAT DATE adjustment	CATO
LEG2_CALC_PER_ADJ_BUS_DATE_CONV	<b>New field</b> - Business day convention for calculation period date adjustments	MODFOLLOWING
LEG2_CALC_PER_ADJ_CALENDAR	<b>New field</b> - Calendars for calculation period date adjustment	CATO
LEG2_INDEX_TENOR	<b>New field</b> - Index Tenor	3M
LEG2_FIXING_DATE_OFFSET	<b>New field</b> - Offset to use with the fixing date	0D
LEG2_INITIAL_STUBRATE_INDEX1	<b>New field</b> - For Initial Stub, specifies the index and tenor to be used for this stub period- Not applicable to Overnight Index swap(OIS)	1M
LEG2_INITIAL_STUBRATE_INDEX2	<b>New field</b> - For Initial Stub, specifies the second index and tenor to be used for interpolating stub rate - Not applicable to Overnight Index swap(OIS)	3M
LEG2_FINAL_STUBRATE_INDEX1	<b>New field</b> - For Final Stub, provides the index and tenor to be used for this stub period - Not applicable to Overnight Index swap(OIS)	1M
LEG2_FINAL_STUBRATE_INDEX2	<b>New field</b> - For Final Stub, specifies the second index and tenor to be used for interpolating stub rate - Not applicable to Overnight Index swap(OIS)	3M
LEG2_NOTIONAL_TYPE	<b>New field</b> - Displays the type of notional schedule for Leg 2: Bullet or Schedule	Bullet

## Contact Information

Please contact [ClearedSwapConversion@CMEGroup.com](mailto:ClearedSwapConversion@CMEGroup.com) if you would like to raise any questions, provide feedback, and/or discuss the CAD CDOR swap conversion in further detail.

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