

# RegTech and Robo-Rulebooks

CFTC Technology Advisory Committee  
October 5, 2018

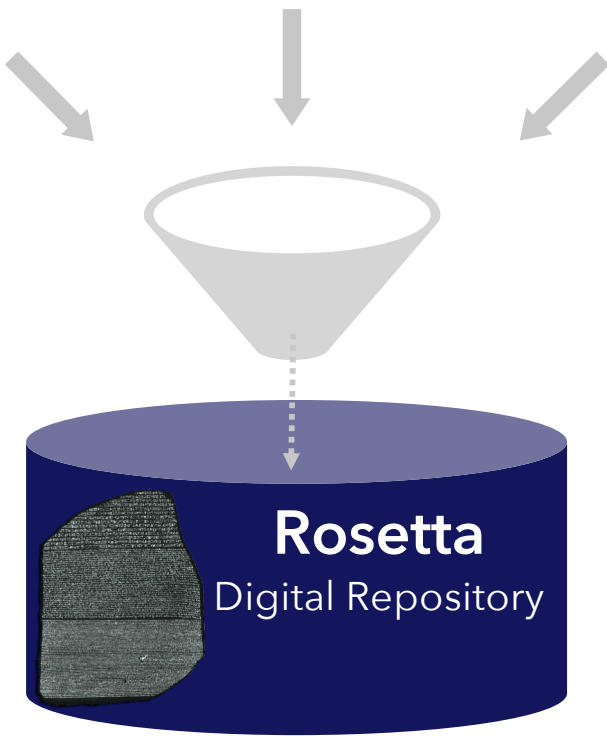
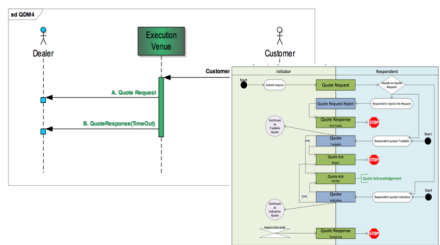
## Data Standards & Practices



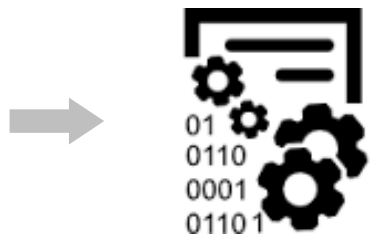
## Marketplace Practices & Regulatory Provisions



## Workflow Standards & Practices



## Executable Code



# 2006 ISDA

## Definitions

(f) if “30/360”, “360/360” or “Bond Basis” is specified, the number of days in the Calculation Period or Compounding Period in respect of which payment is being made divided by 360, calculated on a formula basis as follows:

$$\text{Day Count Fraction} = \frac{[360 \times (Y_2 - Y_1)] + [30 \times (M_2 - M_1)] + (D_2 - D_1)}{360}$$

```

/*****
 * DayCountFraction 30/360
 */

calculation DayCountFractionEnum._30_360 <"2006 ISDA Definition Article 4 section 4.16(f): if “30/360”, “360/360” or “Bond Basis” is specified,
the number of days in the Calculation Period or Compounding Period in respect of which payment is being made divided by 360, calculated on a
formula basis as follows: [[360 x (Y2 - Y1)] + [30 x (M2 - M1)] + (D2 - D1)]/360.">
{
  number: (360 * (endYear - startYear) + 30 * (endMonth - startMonth) + (endDay - startDay)) / 360
}

arguments DayCountFractionEnum._30_360 <"The arguments to calculate the 30E/360 day count fraction. 2006 ISDA Definition Article 4 section 4.16(g).
'Y1' is the year, expressed as a number, in which the first day of the Calculation Period or Compounding Period falls; 'Y2' is the year, expressed
as a number, in which the day immediately following the last day included in the Calculation Period or Compounding Period falls;
'M1' is the calendar month, expressed as a number, in which the first day of the Calculation Period or Compounding Period falls;
'M2' is the calendar month, expressed as a number, in which the day immediately following the last day included in the Calculation Period
or Compounding Period falls; 'D1' is the first calendar day, expressed as a number, of the Calculation Period or Compounding Period, unless
such number would be 31, in which case D1 will be 30; and 'D2' is the calendar day, expressed as a number,
immediately following the last day included in the Calculation Period or Compounding Period, unless such number would be 31 and D1
is greater than 29, in which case D2 will be 30.">
{
  alias period CalculationPeriod( InterestRatePayout -> calculationPeriodDates )

  endYear : is period -> endDate -> year
  startYear : is period -> startDate -> year
  endMonth : is period -> endDate -> month
  startMonth : is period -> startDate -> month
  startDay : is Min( period -> startDate -> day, 30 )
  endDay : is if period -> startDate -> day > 29 then Min( period -> endDate -> day, 30 ) else period -> endDate -> day
}

```

REGULATION (EU) No 600/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 15 May 2014

on markets in financial instruments and amending Regulation (EU) No 648/2012

(Text with EEA relevance)



```
projection rule BuyerSeller_IRS <"MiFIR requires that the parties to a financial transaction always be identified as a buyer/seller.
To this effect, it specifies a set of logic in the case when this differs from standard market practice.">
[regulatoryReference ESMA_MiFIR specification "2016-ITMG-66 - Annex 1 Validation Rules" field "7" provision "The Buyer identification
code is the code used to identify the acquirer of the financial instrument. (...) In the case of swaps related to interest rates or inflation
indices, the buyer shall be the counterparty paying the fixed rate. The seller shall be the counterparty receiving the fixed rate.
In case of basis swaps (float-to-float interest rate swaps), the buyer shall be the counterparty that pays the spread and the seller the
counterparty that receives the spread."]
for target ISO_20022
  when FixFloatSwap exists {
    when SwapFixStream exists {
      map InterestRateStream -> payerParty to synonym Buyr
      map InterestRateStream -> receiverParty to synonym Sellr
    }
    when SwapFloatStream exists {
      map InterestRateStream -> payerParty to synonym Sellr
      map InterestRateStream -> receiverParty to synonym Buyr
    }
  }
  when InflationSwap exists {
    when SwapFixStream exists {
      map InterestRateStream -> payerParty to synonym Buyr
      map InterestRateStream -> receiverParty to synonym Sellr
    }
    when SwapInflationStream exists {
      map InterestRateStream -> payerParty to synonym Sellr
      map InterestRateStream -> receiverParty to synonym Buyr
    }
  }
  when BasisSwap exists {
    when SwapSpread exists {
      map InterestRateStream -> payerParty to synonym Buyr
      map InterestRateStream -> receiverParty to synonym Sellr
    }
    when SwapSpread is absent {
      map InterestRateStream -> payerParty to synonym Sellr
      map InterestRateStream -> receiverParty to synonym Buyr
    }
  }
}
```

## COMMODITY FUTURES TRADING COMMISSION

17 CFR Part 43

RIN 3038-AD08

## Real-Time Public Reporting of Swap Transaction Data

AGENCY: Commodity Futures Trading Commission.

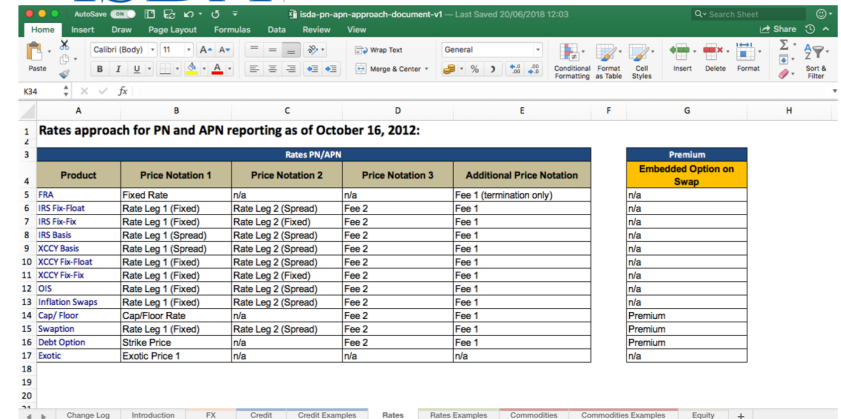
ACTION: Final rule.

Price notation	The price, yield, spread, coupon, etc., depending on the type of swap, which is calculated at affirmation. The pricing characteristic shall not include any	162..... (e.g., 162 may indicate the spread for a credit default swap index)	Information needed to describe the publicly reportable swap transaction and to help market participants and the public evaluate the price of the publicly
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Federal Register / Vol. 77, No. 9 / Monday, January 9, 2012 / Rules and Regulations

	premiums associated with margin, collateral, independent amounts, reconcilable post-execution events, options on a swap, or other non-economic characteristics. The format in which the pricing characteristic is real-time reported to the public shall be the format commonly sought by market participants for each particular market or contract.	reportable swap transaction.
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ISDA Safe, Efficient Markets



ISDA PN-APN Approach Document v1.0 - Last Saved 20/06/2018 12:03

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A B C D E F G H

1 Rates approach for PN and APN reporting as of October 16, 2012:

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	Product	Price Notation 1	Price Notation 2	Price Notation 3	Additional Price Notation	Premium
4						Embedded Option on Swap
5	FRA	Fixed Rate	n/a	n/a	Fee 1 (termination only)	n/a
6	IRS Fix-Float	Rate Leg 1 (Fixed)	Rate Leg 2 (Spread)	Fee 2	Fee 1	n/a
7	IRS Fix-Fix	Rate Leg 1 (Fixed)	Rate Leg 2 (Fixed)	Fee 2	Fee 1	n/a
8	IRS Basis	Rate Leg 1 (Spread)	Rate Leg 2 (Spread)	Fee 2	Fee 1	n/a
9	XCCY Basis	Rate Leg 1 (Spread)	Rate Leg 2 (Spread)	Fee 2	Fee 1	n/a
10	XCCY Fix-Float	Rate Leg 1 (Fixed)	Rate Leg 2 (Spread)	Fee 2	Fee 1	n/a
11	XCCY Fix-Fix	Rate Leg 1 (Fixed)	Rate Leg 2 (Fixed)	Fee 2	Fee 1	n/a
12	OIS	Rate Leg 1 (Fixed)	Rate Leg 2 (Spread)	Fee 2	Fee 1	n/a
13	Inflation Swaps	Rate Leg 1 (Fixed)	Rate Leg 2 (Spread)	Fee 2	Fee 1	n/a
14	Cap/Floor	Cap/Floor Rate	n/a	Fee 2	Fee 1	Premium
15	Swaption	Rate Leg 1 (Fixed)	Rate Leg 2 (Spread)	Fee 2	Fee 1	Premium
16	Debt option	Strike Price	n/a	Fee 2	Fee 1	Premium
17	Exotic	Exotic Price 1	n/a	n/a	n/a	n/a
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Change Log Introduction FX Credit Credit Examples Rates Rates Examples Commodities Commodities Examples Equity +

projection rule Price\_Derivatives <"ISDA specified guidelines as to how an OTC derivative price is expressed for the purpose of complying with the CFTC public price reporting provisions. This has become the reference guideline for the marketplace.">

[marketPractice ISDA write-up "ISDA PN-APN Approach Document v1.0 2013\_03\_15" recommendation "ISDA recommendation for the reporting of the price information of OTC derivatives for compliance with the CFTC Part 43 public price reporting rule, which specifies the Price Notation (PN) and Additional Price Notation (APN) fields."]

for target CFTC\_Part43

when FixFloatSwap exists (

map SwapFixRate to synonym PN1

map SwapSpread to synonym PN2

map SwapFee to synonym [PN3, APN]

)

when InflationSwap exists (

map SwapFixRate to synonym PN1

map SwapSpread to synonym PN2

map SwapFee to synonym [PN3, APN]

)

when BasisSwap exists (

map SwapSpread to synonym [PN1, PN2]

map SwapFee to synonym [PN3, APN]

)

when FixFixSwap exists (

map SwapFixRate to synonym [PN1, PN2]

map SwapFee to synonym [PN3, APN]

)