



Eurex Clearing




OTC Interest Rate Derivatives

March 2019



The only fully-integrated EU27 cross-asset infrastructure



Integrated across all major asset classes

-  **Single legal netting entity** for Fixed Income, FX and Repo
-  **Core** EU Euro F&O Bund/Bobl/Schatz, BTP/OAT/Bono, OTC IRD, Inflation, XCCY
-  **Optimisation** of margin and collateral through **integration with Repo** and **reuse**




Complete toolbox for a Euro ecosystem

-  Home of the Euro, € ETD, € OTC, € Repo & GC pooling, € XCCY
-  202 ETD Clearing Members (CMs); 395 Non-Clearing Members; 59 OTC CMs; 171 ETD / OTC Disclosed Clients
-  EU27 Central Banks, Treasury Agencies & Supranationals
-  Direct membership buyside solutions for large directional counterparties (eg Pension Funds)

Convergence of Listed & OTC













-  Margin, capital and operational efficiencies
-  Member led innovation in new product development (e.g. TRF, Corporate Bond Index Future)

Changing Market Structures

-  Solutions for broader memberships and direct access to CCPs for buyside
-  Mutualisation diversification, reduced concentration, increased likelihood of porting
-  Access to central bank; greater liquidity in stressed markets; increased collateral flexibility

Critical to our success is the development of products and services to enable our clients to benefit from capital, margin and operational efficiency

OTC Interest Rate Derivatives Product Coverage

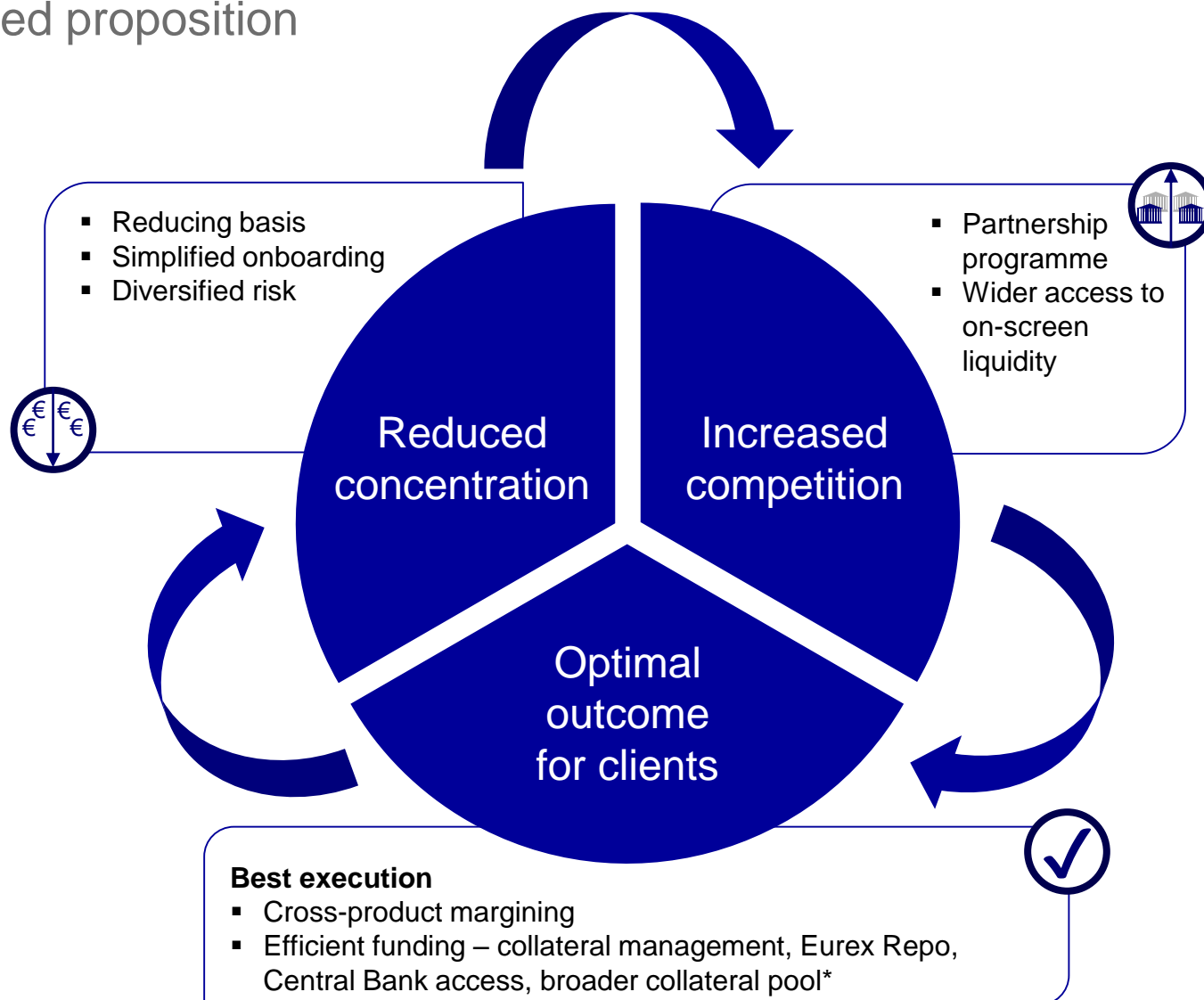
Type	Currencies	Maturity (years) ^[1]	Supported types	Stub type
IRS	EUR GBP USD 	≤ 50	<ul style="list-style-type: none"> Plain vanilla (fixed/float) Compounding float legs Zero coupon fixed or float legs Variable notional, coupon rate and/or index spread Forward starting 	 short first, short last long first, long last  short long first predetermined first fixing
	CHF JPY DKK NOK SEK 	≤ 30		
	PLN 	≤ 10		
Basis	EUR GBP USD 	≤ 50	<ul style="list-style-type: none"> Float/Float Variable notional and/or Index spread Forward starting 	
	CHF JPY 	≤ 30		
OIS	EUR GBP USD CHF JPY 	≤ 30	<ul style="list-style-type: none"> Plain vanilla (fixed/float) Forward starting 	short first, short last long first, long last
ZC Inflation	EUR 	≤ 30	<ul style="list-style-type: none"> Plain vanilla (fixed/float) HICPxT (Euro-zone), FRCPIx (France), UK RPI (UK) 	
	GBP 	≤ 50		
FRA	EUR GBP USD CHF JPY SEK 	≤ 3	<ul style="list-style-type: none"> Plain vanilla (fixed/float) Forward starting 	
	DKK NOK PLN 	≤ 2		

Settlement:
 T+1 currencies =
 EUR, USD, GBP, CHF, PLN
 T+2 currencies =
 JPY, DKK, SEK, NOK

[1] All dates + 10 business days


Best Execution & Cost of Clearing

Enhanced proposition




Netting

Eurex Clearing Services

 **Risk-free ↓ of trade exposures**; simplified position management

 ↓ of **leverage ratio** and **cost of capital**

 ↓ **operational + CCP concentration risk**

 Extensive **reporting** incl. “what if” reporting to **preview** netting opportunities

✓ Available on all accounts

✓ Frequency: daily basis

✓ Highly flexible: level of netting is set on GUI

✓ Auto netting or selective netting is possible

✓ Instructed on execution or available post-trade

✓ Result will be a termination of old trades, creation of new trades

Basic Netting



Swap terms must match (excl. notional + direction)

Fee Netting



Considers **different fee schedules** assigned to swaps



Fees paid / received on same date can be offset or accumulated



Terms must match except fees, notional and direction

Rate Blending



Swaps with **different fixed rates** (float legs match)




The new fixed leg is formed by blending the individual fixed rates




Terms must match except fixed leg, fees, notional and direction


Multilateral Cleared Compression via TriOptima

Eurex Clearing Services


 Risk-constrained ↓ **of trade exposures** that have similar but not identical payment dates or maturities


 CCP = cash flow + market risk **neutral**

 ↓ of **leverage ratio** and **cost of capital**

 **Simplified** position management and default management process

 ↓ **IM** and **DF** contribution

 ↓ **operational** + **CCP concentration** risk

 Termination / partial termination of original trades

 Reporting available from TriOptima to **preview compression opportunities**

✓ Risk constrained compression

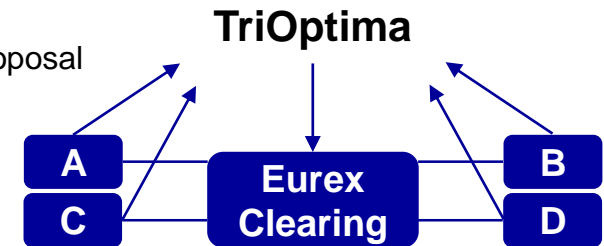
✓ The risk profile of a member portfolio can change within pre-specified limits defined by the member

✓ Available for house transactions, to be extended to client business

✓ Frequency: cycles generally run quarterly or annually – depending volume and demand

Process

- 1 Members sign up for TriOptima compression cycle
- 2 Risk tolerances defined by the Members
- 3 Transaction data is submitted to TriOptima from multiple counterparties
- 4 Unwind proposal agreed by each participant
- 5 ECAG confirms adequate margin cover
- 6 Compression proposal becomes legally binding and trades are compressed



Eurex Clearing Prisma – Portfolio & Cross-Product Margining

Eurex Clearing Services

Prisma delivers **post-trade efficiencies** by considering **hedging** and **cross-correlation effects** when determining the margin requirement on a portfolio



Portfolio margining:

- 1 Risk netting within **listed** positions
- 2 Risk netting within **OTC** positions



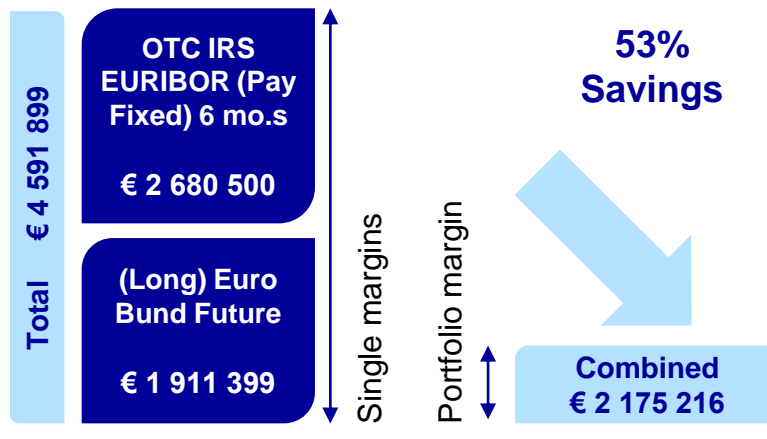
Cross-product margining:

- 3 Risk netting between **listed** and **OTC**

- ✓ Reduced CCP and Clearing Broker exposures
- ✓ Lower collateral and liquidity demand / costs
- ✓ Robust methodology designed to enable stable and lower initial margin requirements
 - ✓ Lower default fund requirement
- ✓ Consistent risk and default management process for listed and OTC products
 - ✓ Real time risk calculation and data provision

Up to 70% margin reduction

Worked example:



Margin Calculators

Prisma Online Margin GUI

- replicate and calculate margins by uploading positions via CSV files.

Prisma Margin Estimator (PME)

- Developed in partnership with OpenGamma to provide enhanced margin analysis

Bloomberg Margin Estimator

- Embedded within Bloomberg, powered by OpenGamma

STP of Cleared Derivatives & OTC Novation Buffer

OTC IRD Service Enhancements 2018

STP of Cleared Derivatives

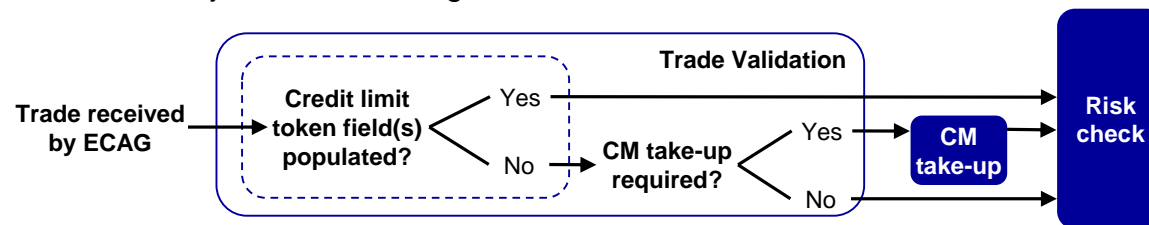


Straight-Through Processing (STP) requirements of RTS 26:

- Execution on trading venue vs. bilateral, no more ETD / OTC distinction
- Clearing certainty and pre-trade check
- Swift processing from execution to clearing acceptance
- Treatment of trades rejected for clearing



Credit limit token check:

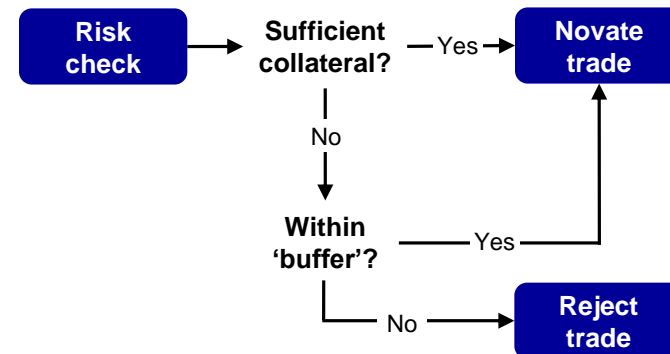


OTC Novation Buffer



OTC Novation Buffer on account level (Effective date: end of Q1 2018)

- The OTC Novation Buffer parameters are set up for all Clearing Members (default values) and lower values can either be set upon the sole risk assessment of Eurex Clearing AG or requested by members.
- The parameters are currently configurable on member level. By end of Q1 2018, the OTC Novation Buffer parameters will be configurable on account level / collateral pool.



Collateral efficiency: the key to portfolio & liquidity management

Initial Margin

- Largest list of eligible collateral
- **> 17,000*** ISINs accepted based on ECB and SNB eligibility
- **Reuse of security collateral** received when cash invested in reverse repo on GC Pooling®



Variation Margin

- **Collateral transformation** tools to increase the effective supply of collateral
- HQLA can **generate additional returns** via repo and cash generated can be used for VM



Collateral Management

- Tri-Party collateral management, automated eligibility, substitution and daily valuation reports
- Facilitates **optimisation** across:
 - Eurex Clearing Margin
 - Cleared and non-cleared Repo
 - Securities lending collateral
 - Segregated bi-lateral IM
- **Real-time margins** aligned with real-time cash & collateral management
 - T2 access to central bank
 - Same day cash generation, € cut-off 17.30
 - CBL, CBF, SIS collateral locations

Eurex Clearing Admissible Collateral

Bonds**	Equity**	Cash	Other
Government State Agency Corporate Mortgage	DAX* EURO STOXX 50* SMI*	CHF EUR GBP USD	ETFs*** iShares ETFs • Core DAX UCITS • EURO STOXX 50 U • EURO STOXX UCITS • DivDAX UCITS • STOXX Europe 50 UCITS
Denominated in EUR, USD, CHF, JPY, GBP, DKK, NOK, SEK, AUD, CAD	Denominated in EUR and CHF		Denominated in EUR

*Your selected clearing member may offer a subset of this schedule

Membership Types

Clearing Memberships



General Clearing Member

GCMs may clear their own business and those of all clients
Can also act as Clearing Agent for BCMs



Direct Clearing Member

DCMs can clear their own business and those of affiliated NCMs. They may also clear for undisclosed clients and/or DCs – OTC DCMs can only clear proprietary business



Basic Clearing Member

Also known as an ISA Direct member. It combines elements of direct clearing membership and traditional service relationship in client clearing. Principal relationship with CCP, but requires the support of a Clearing Agent

Client Types

Clients of a Clearing Member can be either undisclosed or disclosed (i.e. known) to Eurex Clearing. Depending on the client type, varying levels of position segregation and asset protection can be achieved.

Undisclosed	Disclosed Direct Client (DC)			
Direct/Indirect	Basic DC	DC with System Access	DC Market Participant	Fund Manager (FM)
<ul style="list-style-type: none"> Relationship remains solely between CM and client. No onboarding requirements with Eurex Clearing. Available for direct clients as well as the indirect clients. 	<ul style="list-style-type: none"> No trading license Optional reporting available 	<ul style="list-style-type: none"> No trading license Access to post-trade management 	<ul style="list-style-type: none"> Executes own transactions on the exchange Access to post-trade management 	<ul style="list-style-type: none"> Designed to support ease of FM set across onboarding and reporting Each fund has own position account and legal segregation
<ul style="list-style-type: none"> No or limited contractual relationship with Eurex Clearing Known via name, legal form, address of its statutory seat, contact details (for DMP) and LEI Available for omnibus segregation (GOSA) and individual segregation (ISA) 				

Membership Types

Member categories comparison

	Listed				OTC				
	DC Market Participant	DC	DCM	GCM	DC	DCM	GCM	CA	BCM
Execution	Prop and client	-	Prop and client ¹	Prop and client	-	-	-	-	-
Clearing	-	-	Prop, affiliated NCM (>50%), DC and undisclosed clients ¹	Prop and client	-	Prop	Prop and client	Client	Prop
Available to	Proprietary: Anyone Agency: FCA-regulated	Proprietary: Anyone Agency: FCA-regulated	Banks, Financial Service Providers, Investment Firms, Investment Funds, Insurance Co, Pension Funds ³	Banks, Financial Services providers, Investment firms ³	For non-trading clients ⁷	Banks, Financial Service Providers, Investment Firms, Investment Funds, Insurance Co, Pension Funds ³	Banks, Financial Services providers, Investment firms ³	GCM	Banks, Financial Service Providers, Investment Firms, Investment Funds, Insurance Co, Pension Funds ³
Capital requirements ^{2a}	50k Euro	-	€ 7.5mn or 20% of IMR ²	€ 30mn or 20% of IMR ²	-	€ 7.5mn or 20% of IMR ²	€ 30mn or 20% of IMR ²	€ 30mn or 20% of IMR ²	€ 7.5mn or 20% of IMR ²
Default Fund contribution ^{2a}	-	-	€ 1mn or 7% of IMR ²	€ 5mn or 7% of IMR ²	-	€ 1mn ⁴ or € 100k ⁵ or 7% of IMR ²	€ 5mn or 7% of IMR ²	€ 1mn ⁴ or € 100k ⁵ or 7% of IMR ² (provided by Clearing Agent)	
Admission / licence fee	-	-	€ 50k / € 25k ⁶	€ 50k / € 25k ⁶	-	€ 50k / € 25k ⁶	€ 50k / € 25k ⁶	- ⁸	€ 50k / € 25k ⁶

¹ client activity (ie clearing) only for banks, financial service providers & investment firms

² is the higher of the 30-day average or of the 250-day average of IMR

^{2a} always the highest of the mentioned amounts

³ entities regulated by local competent authority

⁴ Banks, Financial Service Providers, Investment Firms, Insurance Companies

⁵ Investment Funds, Insurance Pools, Pension Funds

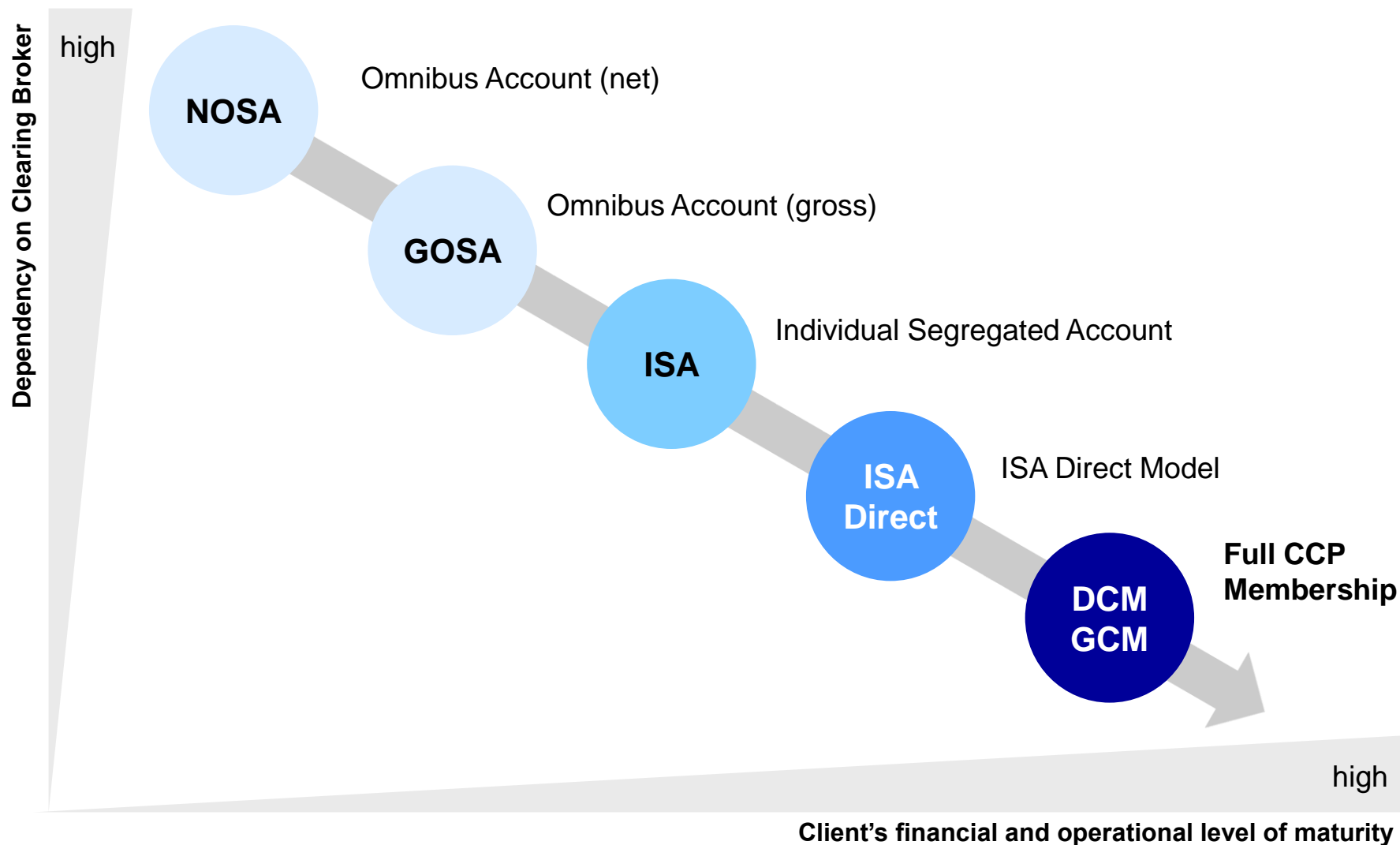
⁶ If already a Clearing Member for any other markets, there are no additional admission or licence fees

⁷ e.g legal entity, investment fund

⁸ covered via GCM membership

Segregation Models

Clearing and Asset Segregation Models



Segregation Models

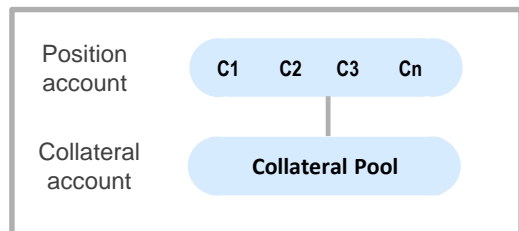
What level of segregation is right for you?

	NOSA	GOSA	ISA	ISA Direct
Fellow customer risk	Yes	Limited	No	No
Trades held in position acct	With other clients	Individual a/c	Individual a/c	Individual a/c
Margin efficiency	Net	Gross	Gross	Gross
Collateral pool	Omnibus	Omnibus	Individual	Individual
Securities held as	Pledge	Pledge	Pledge or Title transfer	Pledge
Collateral allocation	Value	Value	Asset	Asset
Porting	Available with fellow customers	Available as individual	Available as individual	Not applicable New CA required
Collateral return if porting fails	Via insolvency administrator	Direct from CCP	Direct from CCP	Not applicable
Direct collateral transfer	-	-	Available for title transferred security collateral	Available for title transferred security collateral
Direct reporting	-	Available	Available	Available
CASS protection	Available	Available	Available under pledge for security collateral	-
Clearing model / membership	Elementary Clearing Model		Individual Segregated Account	Basic Clearing Member

Segregation Models

What level of segregation is right for you?

NOSA



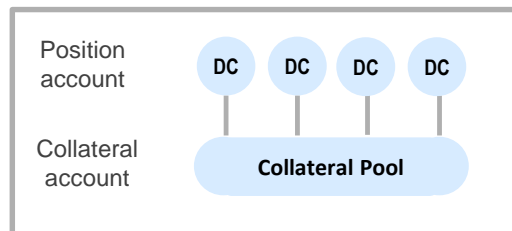
C Undisclosed client

- Simplest account for client clearing
- Undisclosed clients combined in a position account with other client positions
- Margin is calculated on a net basis per position account

Safety and Considerations

- Fellow customer risk across positions and collateral shortfalls
- Margin netting benefits can be derived
- Collateral is allocated by value
- Porting available with fellow customers
- Close out: Collateral will be returned for the benefit of clients via the insolvency administrator

GOSA



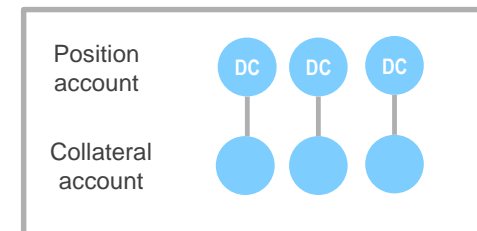
DC Disclosed client

- Clients request to hold positions in a separate position account and become known to the CCP
- Does not protect specific assets or assign excess to any specific GOSA client
- Margin is calculated on a net basis per position account (i.e. gross per client)

Safety and Considerations

- Fellow customer risk is limited to collateral shortfalls
- Positions are segregated from other clients
- Collateral is allocated on a value basis
- Porting available for individual clients
- Close out: Collateral will be returned directly to the client (excluding excess)

ISA



DC Disclosed client

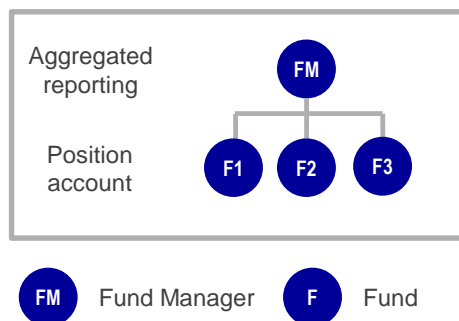
- Highest level of protection. Positions and assets are protected against the default of others.
- Option to deliver margin collateral in form of securities by granting a pledge to Eurex Clearing or via full title transfer
- In a default, clients port to a replacement Clearing Member or can elect to close out and directly receive their collateral

Safety and Considerations

- Highest level of client segregation
- No fellow customer risk
- Delivered assets are protected
- Porting available for each client
- Close out: remaining collateral returned directly to client **including any excess**

The Fund Manager Set Up allows fund specific position account set-up in a operational efficient manner

Fund Manager Set Up



- Eurex Clearing has developed a **reporting and legal approach for funds** which **streamlines** the **on-boarding process** and **provides flexibility** for an **efficient** position and collateral **account set-up**.
- For documentation purposes, the Fund Manager enters into an agreement with Eurex Clearing and simply lists all funds it is acting on behalf of. There is **no need for each fund to sign legal agreements with Eurex Clearing**. The Fund Manager receives **detailed** and **aggregated reporting**.
- Position account set-up with **positions segregated at fund level**.

Fund Manager set-up is available for all collateral segregation options:

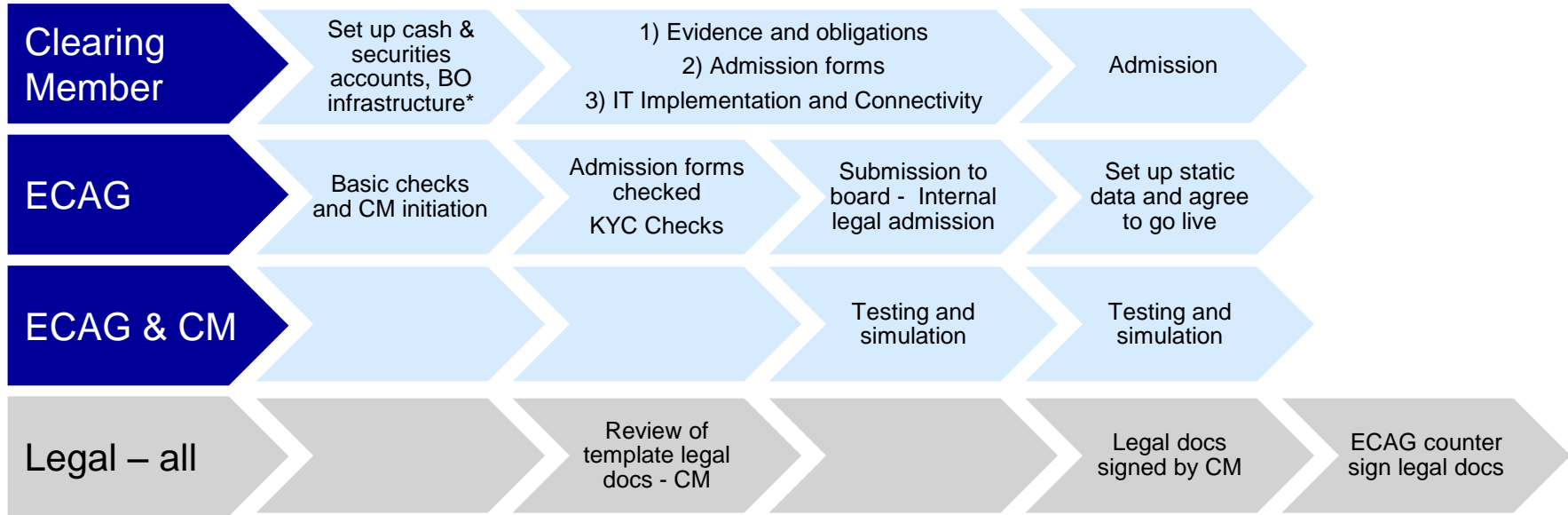
GOSA

+

ISA

Onboarding

Clearing Member (CM) - OTC and Listed



Client Documents

- PTO

KYC and AML

- KYC check dependent on the risk classification, regulation and jurisdiction of the customer.
- Wherever possible Eurex Clearing will download any publicly available evidences

Onboarding effort



*Dependent on account set up with external relevant providers

Onboarding

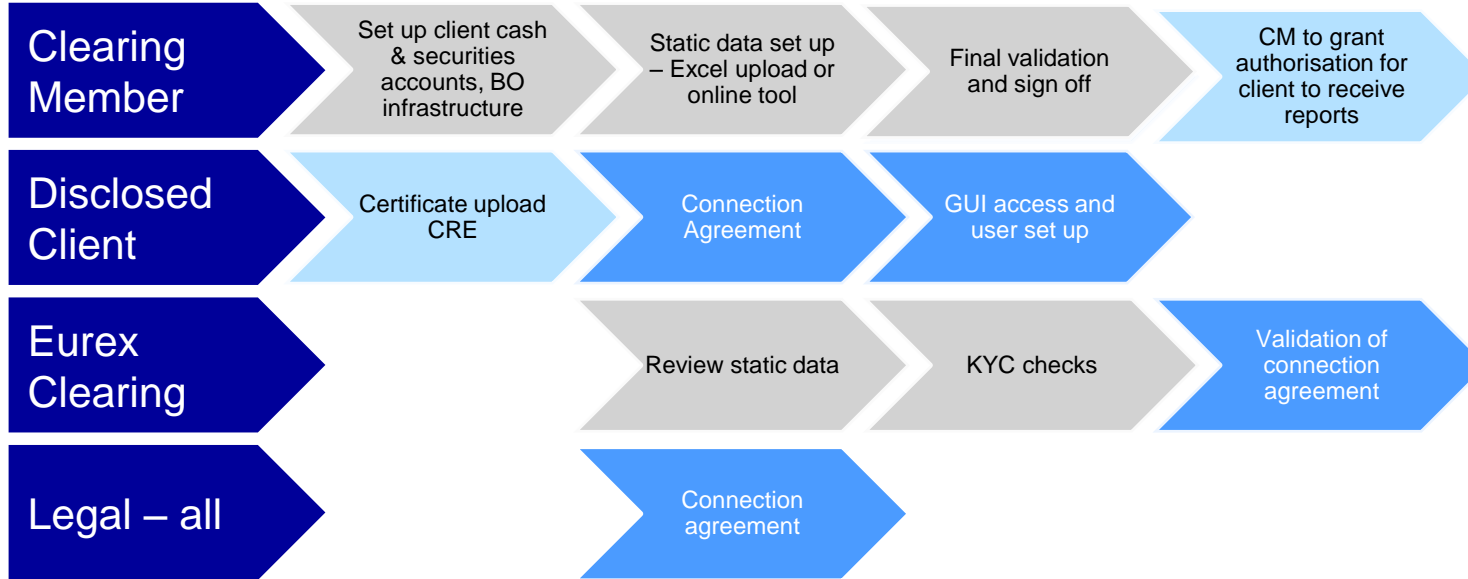
Documentation for Clearing Members at Eurex

	Listed CM	OTC CM	Extend to CA	Client Clearing OTC
Evidences and obligations				
Authorised signature list	■	■	■	■
KYC checks ¹	■	■	■	■
Excerpt from the commercial register ¹	■	■	■	■
Supervisory authority confirmation ¹	■	■	■	■
Default fund contribution	■	■	■	■
Qualified clearing staff	■	■	■	■
Confirmation of capital	■	■	■	■
Admission				
Static data form for CM		■		■
Application for clearing licence	■	■		■
Cash and securities account forms	■	■	■ Client	■
GUI user forms	■	■		■
Certificate of Sanctions Compliance	■	■		■
Collateral deposit / release forms	■	■		■
Eurex OTC Clear user form		■		■
ISA Direct segregation sheet			■	
Clearing model bulk upload application ²				■
IT connectivity	■	■		
Legal documents				
Clearing agreement (CM / ECAG)	■	■		■
Clearing agreement (CA / BCM)	■	■	■	
Pledge agreement for securities	■	■	■	■
Clearing Agent limitation notice	■	■	■	
Security Trust Agreement	■	■		■

[1] CM only provide if ECAG cannot source independently

[2] for ISA, OSA, MOSA

Onboarding – Disclosed Client

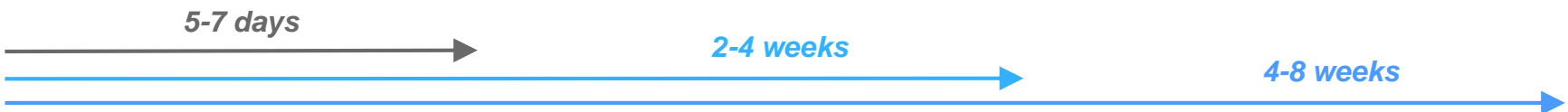


- Basic (+ optional Reporting)**
- Jurisdiction check
 - Sanction screening
 - Limited KYC
 - CRE access document (optional)

- System Access**
- Jurisdiction check
 - Sanction screening
 - KYC
 - CRE access document
 - Connection agreement
 - Authorised signatory list

- Trading Market Participant**
- Jurisdiction check
 - Sanction screening
 - KYC
 - CRE access document
 - Connection agreement
 - Authorised signatory list

Approximate timelines post-cash account setup (variable):



Pricing & Fees

Fee		Clearing Members		Disclosed Clients ^[3]	
		Standard Plan		Standard Plan	High Turnover
Booking fee	Booking fee / million in trade Currency	✓	Flat Fee Packages (Gold, Silver, Bronze)	✓	✓
	Maturity premium / million, per year	✓		✓	X
Maintenance fee	/ million notional per day	✓		✓	✓
Other charges	Administration charge	✓		X	X
	License fee	✓	X	X	
	Cash handling fee	✓	✓	✓	
	Securities collateral fee	✓ ^[1]	✓ ^[1]	✓ ^[1]	
Additional services	Trade netting fees	✓ ^[2]	✓ ^[2]	✓ ^[2]	
	Multilateral compression	✓	N/A	N/A	

[1] If Security re-use is utilised, securities collateral fee is waived for Clearing Members. For Disclosed Clients with an own member ID, securities collateral fee is currently waived

[2] Some levels of risk free netting are free of charge [3] only for members with their own member ID

Pricing for Clearing Members (CMs)

OTC Booking Fee	Standard	
	IRS, OIS, FRA	ZCIS
Fixed booking fee <i>per million in trade currency</i>	0.25	0.375
Maturity premium <i>per million per year in trade currency</i>	0.75	1.125
Fee cap <i>(Fixed booking fee + Maturity premium) per million in trade currency</i>	18.00	27.00
Maintenance Fee	IRS, OIS, FRA	ZCIS
Maintenance fee <i>per million notional per day in trade currency</i>	0.007	0.028

Backloading
discount for
booking fee:
70%

Flat Fee Packages for Clearing Members (excluding BCMs) – House Account

OTC Booking Fee	IRS, OIS, FRA			ZCIS	
	Gold	Silver	Bronze	Gold	Silver
Fixed fee p.a.	€2.75 mil	€1.75 mil	€750k	€375k	€70k
Threshold for cumulative cleared notional volume included in fixed fee	unlimited	€2,000 bn	€200 bn	unlimited	€8 bn
Rebate to Standard Fee Model if cleared notional volume exceeds threshold	n/a	75%	75%	n/a	60%
Threshold for daily notional outstanding included in fixed fee	unlimited	€2,000 bn	€200 bn	unlimited	€8 bn
Rebate to Standard Fee Model if notional outstanding exceeds threshold	n/a	75%	75%	n/a	60%

No minimum
fees or
account
maintenance
fees

Pricing for Disclosed Clients

			Standard		High Turnover*
			IRS, OIS, FRA	ZCIS	IRS, OIS, FRA
OTC Booking Fee					
Fixed booking fee per million in trade currency			0.25	0.375	0.10
Maturity premium per million per year in trade currency			0.75	1.125	
Fee cap (Fixed booking fee + Maturity premium) per million in trade currency			18.00	27.00	Cap € 30.00 / Floor € 10.00
Booking fee rebate	€240 bn to €720 bn	<i>Cumulative cleared notional</i>	15%		
	€720 bn to €1,500 bn		25%		
	> €1,500 bn		35%		
Maintenance Fee					
Maintenance fee per million notional per day in trade currency			0.007	0.028	0.001
Maintenance fee rebate	€240 bn to €720 bn	<i>Outstanding notional</i>	15%		
	€720 bn to €1,500 bn		25%		
	> €1,500 bn		35%		

Fee models for DCs designed to consider different customer types

Backloading discount for booking fee: 70%

No minimum fees or account maintenance fees

No collateral management fees

* High turnover model is only for members with their own member ID

Trade Netting Fees – DC and CM

Fee Netting Level		Clearing fee for notional amounts terminated	
Level 1	Basic netting	Free	
Level 2	Fee netting	Free	
Level 3	Rate blending	0.3 Fixed fee in trade currency per million trade notional terminated, exclusive of the notional of the resulting trade(s)	
		Resulting Trades	Fees are calculated in accordance with Standard Pricing Model, High Turnover Pricing Model (DC with own member ID only) and Rebate Scheme for Clearing Members' Own Accounts

Multilateral Compression Fees – CM

Multilateral Compression	Clearing fee for notional amounts terminated
Trades terminated by compression	0.15 Fixed fee in trade currency per million trade notional terminated, exclusive of the notional of the resulting trade(s)
Resulting trades	Fees are calculated in accordance with Standard Pricing Model and Rebate Scheme for Clearing Members' Own Accounts

Other Fee Elements – Clearing Members

Admission Fee

New clearing member joining Eurex Clearing attract an admission fee:

- **Admission Fee:** € 50,000 (payable only for first clearing membership, not additional memberships)
- **Licence Fee:** € 25,000 p.a. (flat fee payable independent of the number of clearing licences)

Collateral Management Charge

Securities and cash collateral used to cover margin is subject to the following charges per year:

Cash Handling Fee (bps)		Securities Collateral Fee (bps)			
Currency	Applied deduction	Account / Member type	Cash Component		
			< 20%	20% ≤ x < 30%	≥ 30%
EUR/CHF/GBP	20 ^[1]	GOSA / DCM / DC	10	7.5	5
Other currencies	On request ^[2]	NOSA	10	7.5	5
		ISA Direct / BCM ^[3]	5	3.75	2.5
		GOSA / ISA	5 0	3.75 0	2.5 0
			ETD		
		OTC ^[4]	0	0	0

[1] 10bps for GOSA / ISA Direct / Disclosed Client for ETD

[2] Securities Collateral Fee derived by same proportional logic; Securities Collateral Fees displayed based on EUR/CHF/GBP Cash Handling Fee

[3] Fee waived until further notice

[4] ETD pricing applied for commingled pools of ETD and OTC. A separate OTC pool can be set up to get OTC pricing

Reuse Securities Fee

Currently waived by Eurex Clearing – A security collateral fee of 3 basis points per year is foreseen for security collateral reused towards Eurex Clearing from GC Pooling[®] cash provider activities.

Concentration add-on for cash quota <20% (applied on Clearing Member level)

Waived until 1 Jan 2019 +100% of applicable Security Collateral Fee (e.g. 10bps for standard fee cash component <20%)

Collateral is used in this order: **1** Reuse, **2** Cash, **3** Securities

Contacts at Eurex

Eurex Fixed Income Derivatives, Funding & Financing Sales

Global Head FIFF Sales	Head of FIFF Sales Americas	Head of FIFF Sales Asia (Hong Kong)	Head of FIFF Sales - UK & Northern Europe
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