

# ETD Clearing Setup Guide Exchange-Traded Derivatives Version 5.0.2

April 2017 — Fifth Edition

This document describes the setup of Calypso in order to process exchange-traded derivatives (ETD) clearing activity for clearing brokers on their behalf or on behalf of their clients.

# [NOTE: The Calypso License to use this Calypso Integration Module does not include a license for any third-party data services to which this module can interface. Clients are responsible for contracting with the appropriate third-party data service(s) prior to using this Calypso Integration Module]

Revision date	Comments	
September 2015	First edition of ETD Clearing.	
November 2015	Second edition – Added counterparty-facing margin call contracts.	
July 2016	Third edition for ETD Clearing version 4.1.4.	
December 2016	Fourth edition for ETD Clearing version 4.2.0	
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Importing Market Data         Variation Margin Calculation         Overview         Scheduled Task CLEARING_VM_CALC         1       Clearing Transfer Trades         2       VM Collateral Exposure Trades (OTE Model Only)         Initial Margin Calculation         Risk Files         1       Required risk files         2       Risk files         1       Required risk files         2       Risk files location         Navigator       Account Setup.         Positions       Position Keeper Report         2       Position CSV File.         Booking date       Collateral Contracts         IM Calculation and Reporting       Process from Positions to Initial Margin         Running the Scheduled Task CLEARING_IM_CALC       Scheduled Task CLEARING_IM_CALC	82 84 84 84 86 87 90 90 91 91 91 91 91 93 94 94 94 94 96 96 96 96 97 97 97 97 98 98			
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# Section 1. Installation

The components of the ETD Clearing module are installed as part of the Calypso Installer when you select the "Clearing Member" solution.

Setup - Calypso 15.1.0.11-SNAPSHOT
Select Components Which components should be installed?
Select the components you want to install; clear the components you do not want to install. Click
📰 📝 📩 Base Installation (software required for all installations, includes Navigator) 🧕
🖕 🕼 🕼 Solutions (pre-packaged options for installing standard configurations) 🧕
🔲 📩 Back Office (Additional interfaces and optional modules)
🔲 📩 Cash FX Trading
🔽 📩 Clearing Member
🗸 📩 Collateral Management

You also need to select the interfaces "ATEO LISA middleware" and "FOW Trade Data".

- CMF OTC Clearing Back office processing Valuation of open trades Generation of client statements.
- **Collateral** Allocation of margin calls.
- Data Uploader Upload of trades received by the ATEO into Calypso.
- ATEO LISA Middleware Import of Listed Derivatives Trades
- FOW Trade Data Import of Listed Derivatives contracts

2 Please refer to the *Calypso Installation Guide* for details on the Calypso Installer.

If you are installing a CUP (Calypso Upgrade Package) instead, the instructions are also in the Calypso Installation Guide.

### Database Upgrade

When you run Execute SQL as part of your installation, the data files will be already loaded.

D Please refer to Calypso Collateral Management release notes for upgrade information, if any.

# Section 2. Overview

Calypso's ETD clearing solution combines Calypso's Back Office, Connectivity and Collateral to offer a complete solution for entities offering ETD clearing services to their internal trading desks as well as to external clients. The primary activities that the clearing member will be relying on Calypso for are:

- The automated creation of standardized Listed Derivatives contracts,
- The use of connectivity and STP workflow to automatically import cleared Listed Derivatives trades into clearing accounts,
- The automatic generation of fees and commissions on incoming trades,
- The calculation of Variation and Initial Margin on open positions
- Management of cash and collateral related to the clearing activities, and
- Generating client statements for their clients to summarize the day's activity.

In order to support these activities, Calypso provides an interface to ATEO's LISA to import cleared trades. These trades will flow into the system in real-time throughout the day. At the end of the day, the system will process the open positions. The processing results in the generation of Calypso trade objects which will facilitate the settlement of cashflows, and contain the valuation of the open positions.

The Collateral Management module will then take over to manage any Margin Calls resulting from the day's activity for each account. This includes not only cashflows related to the cleared trades, but payments made to or from each clearing account as part of routine business.

As a last step, Calypso will aggregate all of the information stored in the system from the activity of each account, and generate a client statement which will be sent to the account holders as a record of their activity.

# 2.1 Clearing House and Product Coverage

Calypso's ETD clearing member solution includes "out-of-the-box" support for connectivity and integration with the clearing houses served by ATEO's LISA.

Calypso's ETD clearing member solution supports Futures, Future Option, and ETO trades.

# 2.2 Realtime Trade Connectivity

Out-of-the-box, the trades are imported in real-time from ATEO's LISA. They can be imported from other sources as needed or they can be manually entered.

The counterparty of the trades is the clearing house or the executing broker.

The trades navigate the Calypso workflow based on their clearing status, using straight-through processing and exceptions monitoring. Once the trades are cleared, they are liquidated as applicable and update the accounts positions.

# 2.3 EOD Processing

The key aspects of the EOD processing are as follows:

- Management of settlement activity flowing from this processing
- Position Management Trade offsetting and lifecycle activity
- Import and storage of settlement prices
- Open positions processing Generation of the variation margin and initial margin requirements related to trade activity and open positions
- Collateral Management process
- Statement Generation
- Roll to next business date

# Section 3. Before you Begin

Before you begin, you need to define the following reference data.

# 3.1 Trade Keyword Configuration

### The Trade Keyword Config should be set up as follows:

Trade Keyword Config							
💯 🕐 🎦 🔚 🛱 🗑 🔁 🙀 🥵 🖓 + Market to filter table content 🛛 XML 🔸							
Id	Version	Name	Туре	Domain	Searchable	Details	5 P
쁥 1903	0	Client	LegalEntity		<b>V</b>	1월 2↓ 💼 🖭 🗣	
1905	0	ClientAccount	Account		1	Id	1903
1906	0	CounterPartyAccount	Account		1	Version	0
1907	0	CCP	LegalEntity		1	Name	Client
1908	0	ExecutingBroker	LegalEntity		$\checkmark$	Type	LegalEntity
1909	0	OrderTaker	LegalEntity		$\checkmark$	Domain	
						Searchable	
						(Name) (Description)	

# 3.2 Domain Values

Make sure that the following domain values are specified.

Domain Names	Values		
DefaultETDPosSpec	Value = name of the Position Specification which is configured as per this document. We call it "ETD Pos Spec"		
	This domain provides the default Position Specification which is to be used in processes where positions and liquidations are required. The value of this domain should be equal to the name of the Position Specification which uses the Liquidation Aggregation of ClientAccount and CounterPartyAccount.		
Liquidation.BookingDateStrategy	Value = Accounting		
	Value = LastStatementDate		
	Value = POAttribute		
ProcessingConfig	Value = ETDClearing.ClearingAccountTransferGeneration		
	Comment = true		
	Activates the generation/suppression of transfers as required by the ETD solution.		
	Value = ETDClearing.IsActive		

Domain Names	Values
	Comment = true
	Activates additional fields in the Fee Definition and Account Definition.
	Value = ETDClearing.SecurityTransferGeneration
	Comment = false
	Suppress the generation of the SECURITY transfer for an ETD transaction. The clearing solution only uses transfers to reflect the cash impact of transactions. Positions on contracts/products is shown in Position Keeper.
	Value = BookingDateManager
	Comment = tk.bo.bookingdate.POAttributeStrategy
	Ensures Booking Date is used when creating Transfers and Trades
	Value = LegacyProductDesc
	Comment = false
	Activates the custom product description which best suits listed products
	Value = LegacyQuoteName
	Comment = true
	Uses the standard (v14) quote name creation
	Value = ExchangeNameInProductyDesc
	Comment = false
	Value = ExchangeNameInQuoteName
	Comment = false
engineParam	Value = LIQUIDATION_CONFIG
	Value = XFER_NEXT_EVENT
	Value = XFER_PAST_GENERATION
	Value = XFER_POS_AGGREGATION_NAME
	Value = XFER_USE_POS_AGGREGATION_ONLY
	Refer to section 3.8.2 Transfer Engine
feeDefinitionAttributes	Value = Duplicate Fee Transfer
	Value = ETD.InventoryBucket
	Value = MarginCall
	Value = MarginCall.Category
	These attributes are used to control the behavior of fees, commissions and technical fees in the system.
feeDefinitionAttributes.ETD.InventoryBucket	Value = Commissions

Domain Names	Values		
	Value = Fees		
	The two allowable Fee Inventory Buckets into which any fee or commission can be assigned.		
feeDefinitionAttributes.MarginCall	Value = Account Level		
	Value = Always		
	Value = Never		
	These attributes are used to control the behavior of fee, commissions and technical fees in the system.		
liquidationKeyword	Value = ClientAccount		
	Value = CounterPartyAccount		
XferPosAggregation	Value = ClientAccount		
	Value = CounterPartyAccount		
	Should match the name of the Liquidation/Position Key set to liquidate by Client and Counterparty Accounts		
InventoryCashBucketFactory	Value = ETD		
	Activates the ETD inventory buckets.		
Clearing.ExternalData.locations	Value: <u>file://C:/<some< u=""> location&gt;/clearing</some<></u>		
	Identifies the location for the local storage of the risk array and settlement price files.		

# 3.3 Pricing Environment

You need a pricing environment to price Futures and Options from quotes when using the Calypso native pricers in reports like the Position Keeper and Trade Browser. The calculation of VM through the EOD process does not rely on a pricer or pricing environment parameters – its logic is written in the scheduled task to match the market standard valuation and rounding specifications.

Repol Credit ABS Corr Pricers Discount Curves	relation Commodity Forecast Curves Su	Custom   rfaces Product	Trade Level Override Calibration Specific Model Parameters FX
Product ADR	SubT	ype ANY	Add
		r	
Product	ExtendedType	SubType	Pricer
FXOption	ANY	ANY	PricerFXOption
ETOFX	ANY	ANY	PricerFXOption
FutureEquity	ANY	ANY	PricerFutureEquity
InterestBearing	ANY	ANY	PricerInterestBearing
ETOEquity	ANY	ANY	PricerETOEquity
FutureDividend	ANY	ANY	PricerFutureDividend
FutureOptionEquityIndex	ANY	ANY	PricerBlack1FFiniteDifference
FutureOptionCommodity	ANY	ANY	PricerFutureOptionCommodity
FutureOptionEquity	ANY	ANY	PricerBlack1FFiniteDifference
FutureFX	ANY	ANY	PricerFutureFX
FutureCommodity	ANY	ANY	PricerFutureCommodity
ETOEquityIndex	ANY	ANY	PricerBlack1FFiniteDifference

The following pricing parameters should be set.

Edit Pricing Parameters Set			_ 🗆 🗵
Pricing Params Set Name	Clearing		
Pricing P	aram Name	Enter Value	
ACCRUAL_BOND_COM		false	<b>•</b>
Product Type ANY	¥	Add	Remove
Product Type	Nam	e	Value
ANY	INSTANCE_TYPE		CLOSE
ANY	NPV_INCLUDE_COST		true
ANY	NPV_INCLUDE_COST_AFTER_	SETTLE	true
ANY	FUTURE_FROM_QUOTE		true
ANY	QuoteUsage		CLOSE
ANY	NPV_FROM_QUOTE		true

# 3.4 Position Configuration

Once the trades are imported, positions are computed by the liquidation engine.

# 3.4.1 Position/Liquidation Key Configuration

Positions in the listed clearing solution are only expected to be offset if both the Client and the CounterParty Accounts match, along with the book and product which are checked by default. This means that close outs will only occur when a trade on a specific product is in the same account on the client side as well as the counterparty side, otherwise the buys and sells will remain open.

To achieve this, create a Position/Liquidation Key Configuration which uses the trade attributes ClientAccount and CounterPartyAccount as the additional liquidation criteria, as shown below.

Z Position/	iquidation Key Configuration - Version - [14	
View		
1	1902 Name ETD Liq Keys	
Attribute	clientAccount,CounterPartyAccount	
		Load
Id 🗵	Name	
	1902 ETD Liq Keys	

# 3.4.2 Liquidation Configuration

The liquidation configuration dictates how position-based products are liquidated (aka offset or closed out) and there is a standard configuration expected to process listed derivatives in Calypso. The liquidation configuration described below should be chosen in the Liquidation Info used in the listed clearing solution.

There are 3 key fields in the Liquidation Configuration window which drive the logic, as described below.

	Configuratio	on Editor							
	Genera	I							
	Name			ETD Liq Config					
	10					U			
	Liquidatio	on Kev		Book Product Aggrega	tion				
	Info Sele	ector		Book, ClientAccount, (	Contract. CounterParty/	ccount. Curr			
	Booking [	Date		POAttribute	POAttribute				
	Liquidat	tion Scope							
	Trade Fil	ter							
nfigurations	fy 🗙 Delet	te							
lame	I	d	Liquidation Key	Info Selector	Trade Filter	Booking Date			
TD Liq Config			0 Book Product Aggrega	ation Book, ClientAccount, (	2	POAttribute			

# 3.4.3 Liquidation Key

-

Calypso requires that the two transactions be on the same product and in the same trade book in order to be liquidated. This field allows the user to add one additional set of criteria called 'aggregation' to use for determining the eligibility of liquidation.

Process	
Liquidation Key	Book Product Aggregation 🚽
Info Selector	Book Product
Booking Date	Book Product Aggregation
Liquidation Scope	OK Cancel
Trade Filter	

Selecting "Book Product Aggregation" will allow us to point to the additional trade criteria of Client Account and Counterparty Account in order to ensure only trades in the same client and counterparty account can be closed out.

We do not want to select "Book Product" as an additional Liquidation Key since that will store positions in 2 simultaneous versions which can decrease performance and add confusion.

# 3.4.4 Info Selector

This field allows the user to include additional criteria of the position by which to define the liquidation rules at a more granular level. The position criteria available to select are shown in the panel on the right.

Info Selector	oductType,ProductSubType,Contract,Exchange,C	Currency	•
Booking Date	Book	- C	
Liquidation Scope	ClientAccount		5
Trade Filter	CounterPartyAccount	0	
	ProductType	=	
	ProductSubType	6	
▼ Delete	Contract		
∧ Delete	Exchange		
td	Currency	*	
10			5
	OK	Cancel	

# 3.4.5 Liquidation Info

Selecting these categories simply make them available to use when we configure the liquidation rules in the Liquidation Info window. By providing more criteria, we can set rules for a specific exchange, currency, contract etc.

Note: <u>The hierarchy of the selection of a rule is dependent on the order in which the fields appear in the Info Selector window</u> above. So, in the screenshot above, "Book" would be the first priority, followed by ClientAccount, CounterPartyAccount, ProductType and so on.

Once selected in the Info Selector field of the Liquidation Config, these fields will be available in the Liquidation Info panel as shown below.

	Liquic	ation Info													
<b>4</b> 3	© 🞦	2 Su 🔒 🙀 😥 🔞 🐻 🔯 (Q- Type here to filter table content X04													
	Book	Cross Book	Product Type	Product Sub Type	Liquidation Config	Liquidation Method	Comparator Method	Date Rule	Liquidation Attributes	Fee Positions	Fees Settlement Amount Positions	Snapshots	Value By Trade	Details	
Filte	ALL		ALL		ETD Liq Config	FIFO	TradeDate	NONE	ETD Liq Keys			V	V	🔝 🕸 🚥 🖛 🕫	
ER														Book	ALL
_														Cross Book	
														Product Type Product Sub Type	ALL
														Liquidation Config	ETD Lia Confia
														Liquidation Method	FIFO
														Comparator Method	TradeDate
														Date Rule	NONE
														Liquidation Attributes	ETD Liq Keys
														Fee Positions	
														Fees Settlement Amount Positions	
														Snapshots	
														Value By Trade	$\checkmark$

The Liquidation Configuration described earlier in this document must be chosen in the Liq Info.

A liquidation method, such as LIFO, FIFO, and MFIFO can be assigned to each configured set of criteria in the Liquidation Info based on the users' requirements.

A comparator method of "TradeDate" is the standard choice for any out of the box liquidation methods, but the user can also choose a Dynamic Comparator which allows more complex comparison of trades based on price, trade time and quantity.

"Value by Trade" should be checked/true to allow positions to be valued based on the individual transaction prices rather than based on the average price of the position. Valuation by trade is the market standard used by clearinghouses and brokers.

# 3.4.6 Dynamic Comparator

The comparator method, "Dynamic Comparator" must be used only with Liquidation Method FIFO or LIFO and the LiquidationEngine in Batch Mode (Environment Property LIQUIDATION\_TIMEOUT = -4).

	🖊 Liquidation Info														
-	C 2	8 6 8	Ē 💀 🖪	Q- Type	e here to filte	r table content	XML 👻								0
	Book	Cross Book	Product Typ	e Produc	t Sub Type	Liquidation Con	fig ClientA	ccount	Compara	tor Method	C	Details		6	7
Filter	ALL		ALL			ETD Liq Config			TradeDat	e		圖 🄃 📼 📑 탄화			
E Cr												Book	ALL		
-	ll l											Cross Book			
												Product Type	ALL		
												Product Sub Type			
												Liquidation Config	ETD Liq Config		
												ClientAccount			
												Contract			
												CounterPartyAccount			
												Currency			
												Exchange			
												Liquidation Method	FIFO		
												Comparator Method	TradeDate		
												Date Rule	NONE		
												Liquidation Attributes	ETD Liq Keys		
												Fee Positions	<b>V</b>		
												Fees Settlement A			
												Snapshots	1		
												Value By Trade	<b>V</b>		
												Comparator Method			
	•										Þ.				
				🔁 Load	Pendin	g Authorization	New	E	Save	ित्त Save A		Save As New	ouplicate	Delete	

Liquidation Method	FIFO	
Comparator Method	TradeDate 🚽	]
Date Rule	Dynamic Comparator 🛛 🖌	
Liquidation Attributes	Manual 📿 🗌	٦

Dynamic Comparator is available in the Comparator Method list.

FIFO
Dynamic Comparator
<b></b>
New Vs New
OpenClose

When selected, a Comparator Dynamic has to be chosen or created by clicking on 🖉 to open the Comparator Dynamic Window.

4	Comparator Dynamic								
<b>-</b>	🛐 🕑 😫 🔚 🎼 😫 🛅 🌇 🙀 🔍 Type here to filter table content 🛛 🛪 🗸 🗸								
-	Name	Description	Liquidation Date Type	OffSettingProcessing	OffSettingElements				
ili ili	New Vs New	New Vs New Automatic TD	Trade Date	Automatic	New Trades Vs New Trades				
	OpenClose	OpenClose Standard	Trade Date	OpenClose	New Closing Trades Vs New Opening Trades,				

### The following fields should be set:

Fields	Description
Name	Name of the Comparator Dynamic
	Will be displayed in the Liquidation Info Window

Fields	Description				
Description	Description of the Comparator Dynamic				
Liquidation Date Type	Fixed Trade Date         Settle Date         EOD Trade Date         Fixed Trade Date         Fixed Trade Date         Start Of Day Trade Date         Date used to compute the Liquidation Date:         • Trade Date         • Settle Date         • Settle Date         • EOD Trade Date:         • Trade Date         • Settle Date: based on Book EOD         • Fixed Trade Date: based on Book Attribute LiquidationTime         • Start of Day Trade Date				
OffSettingProcessing	Automatic         Automatic         OpenClose         Liquidation Processing Type:         • Automatic: Liquidation is automatically performed         • OpenClose: Liquidation is automatically performed only when a Closing Trade is input				
OffSettingElements	Image: Comparator Elements used for Liquidation in decreasing priority.         For OffSettingProcessing = Automatic         • New Trades Vs Open Trades         • New Trades Vs Open Trades         • New Trades Vs New Trades are liquidated with New Sell Trades         • New Trades Vs Open Trades: New Buy Trades are liquidated with Open Trades         • New Trades Vs Open Trades: New Trades are liquidated with Open Trades         • Open Trades Vs Open Trades: Open Trades are liquidated with Open Trades         • Open Trades Vs Open Trades: Open Trades are liquidated with Open Trades         • Open Trades Vs Open Trades: New Trades are liquidated with Open Trades         • Open Trades Vs Open Trades: New Trades are liquidated with Open Trades         • Open Trades Vs Open Trades: New Trades are liquidated with Open Trades         • New Closing Trades Vs New Opening Trades: New Closing Trades are liquidated with New Opening Trades         • New Closing Trades Vs Open Trades: New Trades are liquidated with Open Trades         • New Closing Trades Vs Open Trades: New Trades are liquidated with Open Trades         • New Closing Trades Vs Open Trades: New Trades are liquidated with Open Trades         • New Closing Trades Vs Open Trades: New Trades are liquidated with Open Trades         • New Closing Trades Vs Open Trades Her Trade Attribute OpenClose = C				
	The Closing Trades are identified by the Trade Attribute OpenClose = C				

Fields	Description
	Example:         OffSettingProcessing = Automatic         Offsetting Elements = Open Trades Vs Open Trades, New Trades Vs New Trades, New Trades Vs Open Trades         Liquidation Method = FIFO         Trades:
	<ul> <li>T1: Open Trade 50</li> <li>T2: Open Trade 10</li> <li>T3: New Trade 40</li> <li>T4: New Trade -30</li> <li>T5: New Trade -30</li> </ul>
	<ul> <li>Open Trades Vs Open Trades: no Liquidation as two Buy Open Trades only <ul> <li>T1: Open Trade 50</li> <li>T2: Open Trade 10</li> <li>T3: New Trade 40</li> <li>T4: New Trade -30</li> <li>T5: New Trade -30</li> </ul> </li> <li>New Trades Vs New Trades: T4 fully liquidated by T3, T5 partially liquidated by T3 <ul> <li>T1: Open Trade 50</li> <li>T2: Open Trade 10</li> <li>T5: New Trade -20</li> </ul> </li> <li>New Trades Vs Open Trades: T5 fully liquidated by T1 <ul> <li>T1: Open Trade 30</li> <li>T2: Open Trade 10</li> </ul> </li> </ul>
Ordering Criteria	TradeDatetime       Image: TradeDate       Image: TradeDate         Quantity       Image: TradeDate       Image: TradeDate         Price       Image: TradeDate       Image: TradeDate         External Reference       Image: TradeDate       Image: TradeDate         Image: TradeDate       Image: TradeDate       Image: TradeDate
	Example: OffSettingProcessing = Automatic Offsetting Elements = New Trades Vs New Trades Ordering Criteria = Trade Date (Asc) / Price (Asc) / Quantity (Desc)

Fields	Description
	Liquidation Method = FIFO
	Trades: All Trades are New Trades
	• • T1: TD: 17/11 Price: 100 Quantity: 50
	• • T2: TD: 17/11 Price: 102 Quantity: 50
	• • T3: TD: 17/11 Price: 101 Quantity: -40
	• • T4: TD: 17/11 Price: 101 Quantity: -10
	• • T5: TD: 17/11 Price: 103 Quantity: -10
	• • T6: TD: 17/11 Price: 102 Quantity: 70
	• • T7: TD: 14/11 Price: 107 Quantity: 10
	Process and results:
	Buy Trades after ordering
	- T7: +10
	- T1: +50
	- T6: +70
	- T2: +50
	Sell Trades after ordering
	- T4: -10
	- 13: -40 TE: 10
	- 15: -10
	Trade Open Quantities after Liquidation
	-16: +/0
	- 12: +50

# 3.5 Booking Date

In order to support the processing of transactions and activity for a specific clearing date without changing the activity in the past or including any activity on T+1, Calypso associates a processing date to each Processing Organization. All clearing activity is 'stamped' with this date to tell the system when to include the activity in the end of day and in the client statement.

This concept applies to cleared transactions and all of the related transfers that impact the account balance. The processing date is rolled forward when all of the EOD activity is completed for a given day and shouldn't change until the next day's activity is complete. The date should never be rolled backwards.

# 3.5.1 Set the Legal Entity Attribute 'Booking Date'

To set the processing date of the system for each Processing Organization, set the PO's LE Attribute 'Booking Date' to the desired processing date using the format mm-dd-yyyy as shown below.

Legal Er	ntity Attrib	utes Window -	Version - 0			
Le	gal Entity	NEWYORK		Role	ALL	•
Processing Org ALL		•				
Attrib	ute Type	Booking Date	•	Value	02-15-2017	
Id	Process	ing Org	Legal Entity	Role	Attribute Type /	Attribute Value
4805 ALL		NEWYORK	ALL	Booking Date	02-15-2017	
48	305 ALL		NEWYORK	ALL	Booking Date	02-15-2017

In addition, we need to set the BookingDateManager domain value (found under the ProcessingConfig node) to a value of "tk.bo.bookingdate.POAttributeStrategy".

Z Domain Values	A		Name Institute	
🗞 Reload 📰 Save 🦏 Save All 🛛 🕸 Constraints Setup				0
Q- BookingDateManager       Image: Constraint of the second	Name: <u>V</u> alue: <u>C</u> omment: << <u>A</u> >> <u>R</u> en	ProcessingC BookingDate tk.bo.bookin dd nove	onfig Manager ngdate.POAttributeSt	rategy Add & <u>S</u> ave

In the Liquidation Configuration set the Booking Date field to a value of "POAttribute" so that positions and 'trade open quantities' are also built using the concept of Booking Date. This ensures that T+1 transactions are not impacting open positions on T and are therefore not included in the offsetting process, IM/VM calculation, lifecycle or transaction confirmation reporting in the EOD.

	Configuration Editor					
	General					
	Name		ETD Liq Config			
	Id				0	
	Process					
	Liquidation Key		Book Product Aggreg	gation		
	Info Selector		Book, ClientAccount,	, Contract, CounterPartyA	Account, Curr	
	Booking Date		POAttribute			
	Liquidation Scope					
	Trade Filter					
onfigurations	- <b>M</b> - 1 -					
Add/Modi	ify 🗙 Delete					
Name	Id	Liquidation Key	Info Selector	Trade Filter	Booking Date	
TD Liq Config		0 Book Product Aggreg	gation Book, ClientAccount,	, C	POAttribute	
					Save	Close

# 3.5.2 Rolling the Booking Date Forward

The Booking Date can be moved forward by manually editing the LE Attribute value or can be rolled using the ROLL\_BOOKINGDATE Scheduled Task which will roll the date forward one day according to the calendar set in the 'Business Holidays' Scheduled Task attribute. The date should not be rolled backwards, as once the EOD processing is completed all corrections will happen on the next day – we don't expect to run past days.

Z Scheduled Task Definition							
Scheduled Task Definition							
Use the dialog below to define the attributes for the task to be executed. These attributes will control the behavior of the task. There are two types of attributes, general attributes which are the same across all tasks and task specific attributes. Scheduling of the task is performed using the Task Trigger Definition dialog							
Task Description							
Task Type:	ROLL_BOOKINGDATE -						
External Reference:	ROLL_BOOKINGDATE						
Comments:	ROLL_BOOKINGDATE						
Description:	ROLL_BOOKINGDATE						
Execution Parameters							
Attempts: 1	Retry After: 0 minutes Expected Execution Time (SLA): 1 minutes						
1VM Settings: _Yms5	12m -Ymv1024m -YV MayDermSize - 256m						
Svin SetungsAlliss							
Log Settings:							
Task Notification Options	Publish Business Events To User:						
Common Attribute	400.1						
Processing Org	NEWYORK						
Trade Filter							
Filter Set							
Pricing Environment	default						
Timezone	US/Central						
Valuation Time Hour	22						
Valuation Time Minute	e 0						
Undo Time Hour							
Undo Time Minute							
Valuation Date Offse	t						
From Days							
To Days							
Business Holidays	NYC						
business holidays	Nic						
(Name) (Description)							
	🔚 Save 😣 Cancel						

Whenever we're looking at cash positions we want to use a Position Date of "Settle (Frozen)" which returns the later of the transfer's Settle Date and Booking Date. This way a transfer will never impact the balance prior to the processing date on which it's booked (since Booking Date will always be set to the Processing Date) and any forward settling activity will only impact the account when the settle date is reached.

Settle (Frozen) is used to report balances in the Client Statement, so to match these balances when generating cash and security inventory reports, the user should add the domain values as shown below, which makes them available for selection in the Inventory Cash position report.

Reload 📓 Save 📲 Save All 🛛 🕸 Constraints Setup	Z Domain Values		
	🚸 Reload 📓 Save 🦏 Save All   🐼 Constraints Setup		
Q.~ CLIENT-ACT       1 of 6 (2) (2) Value         InventoryClosurePositions       InventoryInitDate         InventoryInitDate       Value: INTERNAL-ACTUAL-SETTLE (FROZEN)         Value:       INTERNAL-ACTUAL-SETTLE (FROZEN)         CLIENT-ACTUAL-SETTLE       CLIENT-ACTUAL-SETTLE (FROZEN)         CLIENT-ACTUAL-VALUE       CLIENT-ACTUAL-SETTLE         CLIENT-ACTUAL-VALUE       CLIENT-ACTUAL-VALUE         CLIENT-FAILED-AVAILABLE       <<< <u>A</u> dd         CLIENT-FAILED-AVAILABLE       <<< <u>A</u> dd         CLIENT-FAILED-AVAILABLE          CLIENT-FAILED-AVAILABLE          CLIENT-FAILED-AVAILABLE          CLIENT-FAILED-AVAILABLE          CLIENT-FAILED-AVAILABLE          CLIENT-FAILED-AVAILABLE          CLIENT-FAILED-AVAILABLE          CLIENT-FAILED-AVAILABLE          CLIENT-FAILED-AVAILABLE          CLIENT-FAILED-TRADE          CLIENT-THEORETICAL-SETTLE          CLIENT-THEORETICAL-TRADE          EXTERNAL-ACTUAL-SETTLE          EXTERNAL-BANK CONFIRMED-SETTLE	Reload       Save       Save All       Constraints Setup         Q- CLIENT-ACT       1 of 6 ②       ③         InventoryClosurePositions       InventoryInitDate       ③         InventoryPositions       ③       ○         InventoryPositions       ○       ○         InventoryPositions       ○       ○         InventoryPositions       ○       ○         InventoryPositions       ○       ○         ILIENT-ACTUAL-SETTLE       ○	Value	Name:       InventoryPositions         Value:       INTERNAL-ACTUAL-SETTLE (FROZEN)         Comment:          << Add

Statement Configuration should also be set to use Settle (Frozen) Position Date.

ŀ	🖌 Accounts Defin	ition - Authorization mode OFF CL1-001 / 6203 - version 1
	Account Utilitie	s Reports Process Help
	Account Statemen	ts Attributes Interests Limits Consolidation Translation/Revaluation Clearing Browse
l		Statement Type Clearing 👻
	Frequency:	Daily
1	Position Type:	Actual
	Position Date:	Settle (Frozen)
	Active From:	То:
	Message Config:	6202
l		Message Type: CLEARING_ETD_STATEMENT
1		Template: CalypsoETDStatement.xsl
		Format: HTML
		Gateway: FILE
		Last Statement: 06/14/2016

# 3.5.3 Transfer Engine and Workflow

To make sure the transfers behave as expected in this model, we want to set up the system so that we can cancel transfers which are generated intraday if needed, because they have not yet been reported as part of the EOD statement. However, we require that transfers from past days will be reversed by posting a credit/debit on the current processing date, since we don't want to impact the balances that were reported on past statements and have already been distributed to clients.

Refer to 3.8.2 Transfer Engine for the configuration required to support this model.

### **Transfer Workflow**

. . . . . .

The transfer workflow for all transfers other than those related to external payments between client and PO (typically only found on Margin Call trades) will always expect perfect settlement, but we will stop the STP path in VERIFIED status so that if they get updated or cancelled intraday, we can still cancel them. We use an action of SETTLE\_INTERNAL to move them to SETTLED as part of the EOD process, and can use the PROCESS\_TRANSFERS scheduled task with an action of SETTLE\_INTERNAL to isolate only these internal transfers.

External payments will be settled through a SETTLE workflow action, which can be triggered by a separate scheduled task or manually triggered.

Note that there is no CANCEL action from the SETTLED status. This ensures that any transfer which has been settled will be reversed out instead of cancelled.



Screenshot of the PROCESS\_TRANSFER scheduled task used to move internal transfers to SETTLED status once all processing is done, but prior to generating the statement.

🖃 Task Attributes	
Process	Apply Action
Status	VERIFIED
Action to Apply	SETTLE_INTERNAL
Agent	
SD Filter	

# 3.5.4 Behavior of Transactions in the Statement

One of the benefits of using the Accounting Booking Date is that transactions can now be classified as new, backdated, corrected and cancelled by comparing the transactions Settle Date (the date it was cleared) and the Booking Date (the date that the PO was set to when the trade was accepted into the system. This classification is used in the Trade Confirmation section of the client statement is given below, including a description of the enhanced Trade Open Quantity and Liquidation Tables. Note that the statement period is considered to be from the day after the last statement until the processing date on which the statement is being run, so it could include more than one calendar day.

# 3.5.5 Trade Open Quantity (TOQ) Table

Trades which contribute to open positions are stored in Calypso in the Trade Open Quantity (TOQ) table. The structure of the TOQ gives us all of the information we need to know about the

TOQ Id	Trade Id	Trad	le Date	Settle Date	Quantity	Price	Booking Date	e History S	tatus Op	en Quantity	
	1	1000	30-Sep	30-Sep	) 10	99	9 30-Sej	p New E	ligible	4	
	2	1001	30-Sep	30-Sep	-6	10	1 30-Sej	p New E	ligible	0	trade economic

details, when it was entered, when it was cleared and when/if it has been amended or cancelled. The columns in this table are referenced throughout the next sections as a way to determine which transactions to include in each statement section and subsection.

# 3.5.6 Liquidation Table and Liquidation Deletion Tables

Similarly, the history of the offsets of buys and sells are stored in two tables, the Liquidation Table and The Liquidation Deletion Table. Through the combination of these two tables, we can determine what to include in the P&S section of the statement and characterize them appropriately as new offsets or cancelled offsets. The structure of the two tables is shown below and is referenced in the inclusion logic in the next section.

Liquidation Table

Trade 1	Trade 2		Liquidation Date	Quantity	Realized		Booking Date
	1000	1001	30-Sep		6	24000	30-Sep
Liquidation	Deletion Table						
Trade 1	Trade 2		Liquidation Date	Quantity	Realized		Booking Date
	1000	1001	30-Sep		6	24000	30-Sep

# 3.5.7 Trade Confirmation Section – Subheadings and Inclusion Logic

The trade confirmation section will have subsections which identify new (business as usual), cancelled, backdated and amended trades. The logic of which trades to include is described below and depends on the updated Trade Open Quantity (TOQ) table.

### **New Trades**

Top Day trades will be included underneath the subheading "NEW TRADES".

Include trades from TOQ where all of the following criteria are met

Status = Eligible

History = New

Last Statement Date<Later of the Settle and Booking Dates<=Statement Date

LiquidableWith keyword is not populated (trade is not a technical close out trade)

### **Amended Trades**

Amended trades will be included underneath the subheading "AMENDED TRADES".

Include trades from TOQ where all of the following criteria are met

Status = Eligible

History = Amend

Last Statement Date<Booking Date<=Statement Date

Settle Date<=Statement Date

LiquidableWith keyword is not populated (trade is not a technical close out trade)

### **Backdated Trades**

Top Day trades will be included underneath the subheading "BACKDATED TRADES".

Include trades from TOQ where all of the following criteria are met

Status = Eligible

History = New

Last Statement Date<Booking Date<=Statement Date

Settle Date<=Last Statement Date

LiquidableWith keyword is not populated (trade is not a technical close out trade)

This criteria implies that any trade which is put into a new Account is the result of a cancel and replace action. Otherwise, a trade where the Client Account is amended would get picked up in the Amended trade section since the value in the 'History' field would be "Amend".

### **Cancelled Trades**

Top Day trades will be included underneath the subheading "CANCELLED TRADES".

Include trades from TOQ where all of the following criteria are met

Status = Canceled

Last Statement Date<Booking Date<=Statement Date

LiquidableWith keyword is not populated (trade is not a technical close out trade)

Here's a table to help visualize the rules for trade inclusion

# Should I see the trade or transfer impact in my statement?

		BOOKING DATE					
		Before Statement	In Statement	After Statement			
		Period	Period	Period			
	Before Statement Period	No	Yes	No			
SETTLE DATE	In Statement Period	Yes	Yes	No			
	After Statement Period	No	No	No			

### 3.6 Fees Setup

A number of fees need to be setup for the following trades:

- Future and Future Option trades Exchange/Clearing Fees and Commissions (optional)
- Clearing Transfer and Collateral Exposure trades NOV, NOV\_REV, NPV, NPV\_REV, OTE, OTE\_REV, DISC\_FWD\_OTE, DISC\_FWD\_OTE\_REV
- Trade Exercise EXERCISE\_FEE

### Fees and Commissions

These optional fees can be defined by the user, but they must be classified in the Inventory Bucket of "Fees" or "Commissions" in order to be properly aggregated in the cash balance and client statement level.

### EXERCISE\_FEE

Calculated upon exercise.

🖉 Fee Definition				
General		Pr	roperties	
Type:	EXERCISE_FEE		Key	Value
Role:	CounterParty			10.00
Fee Ofset:	0 Cal			
Products:	ALL			
Default Calculator:	NONE			
Include:	Pricing Accounting Allocation		ETD	
	▼ Transfer 🛛 Settlement Amount		Inventory Bucket: Option Cas	h Settlement 💌
Comments	Exercise Fee		🛷 Duplicate Transfer	
comments.			Margin: Always	<b>v</b>

### NOV (Net Option Value)

Properties
Key
Key

Calculated by the scheduled tasks CLEARING\_VM\_CALC and CLEARING\_IM\_CALC.

General		Properties
Туре:	NOV	Key
Role:	CounterParty	i i i i i i i i i i i i i i i i i i i
Fee Ofset:	0 Bus	
Products:	ALL	
Default Calculator:	NONE	
Include:	Pricing Accounting Allocation	ETD
	▼ Transfer   Settlement Amount	Inventory Bucket: NOV
Comments	Net Option Value	🛷 Duplicate Transfer
comments.		Margin: Never

### NOV\_REV

Fee Definition General Properties Type: NOV\_REV Кеу Ŧ Role: CounterParty Fee Ofset: 0 Bus Products: ALL Default Calculator: NONE • Include: 🔽 Pricing Accounting Allocation ETD 🔽 Transfer 🛛 🔲 Settlement Amount -Inventory Bucket: NOV Net Option Value Reversal 🗸 Duplicate Transfer Comments: Margin: Never -

Calculated by the scheduled tasks CLEARING\_VM\_CALC and CLEARING\_IM\_CALC.

### NPV

Conoral

Calculated by the scheduled tasks CLEARING\_VM\_CALC.

Ochicical		
Type:	NPV	Key Value
Role:	CounterParty 🗸	
PnL Category:		
Include:	V Pricing	
Commenter	VM calculation when account set to Realized VM	
Comments:	4	
Trada fan annanska	_	
Trade lee parameters	5	
Fee Offset:	0 Cal	
Products:	ALL	ETD
Default Calculator:	NONE	Inventory Bucket: Variation Margin 👻
Preferences:	Accounting Allocation	Duplicate Transfer
	Transfer Settlement Amount	Margin: Account Level 🚽 Margin Category: VM

Properties

### NPV\_REV

Calculated by the scheduled tasks CLEARING\_VM\_CALC.

General		Properties	
Type:	NPV_REV	Key Value	
Role:	CounterParty 👻		
PnL Category:			
Include:	V Pricing		
Comments:	VM Reversal when Acct set to Realized VM Mode		
Trade fee parameters	5		
Fee Offset:	0 Cal		
Products:	ALL	ETD	
Default Calculator:	NONE	Inventory Bucket: Variation Margin 👻	
Preferences:	Accounting Allocation	Duplicate Transfer	
	☑ Transfer Settlement Amount	Margin: Account Level 👻 Margin Category: VM	

### OTE (Open Trade Equity)

Calculated by the scheduled tasks CLEARING\_VM\_CALC.

🥖 Fee Definition				
General		F	roperties	
Туре:	OTE		Key	Value
Role:	CounterParty		,	
Fee Ofset:	0 Bus			
Products:	ALL			
Default Calculator:	NONE			
Include:	Pricing Accounting	Allocation	ETD	
	🔽 Transfer 🛛 🔲 Settlement Amount		Inventory Bucket; OTE	
Comments	Open Trade Equity		🛷 Duplicate Transfer	
Comments.			Margin: Account Level 💌	Margin Category: OTE

### OTE\_REV

Calculated by the scheduled tasks CLEARING\_VM\_CALC.

🥖 Fee Definition			
General		Properties	
Туре:	OTE_REV	Key	Value
Role:	CounterParty		
Fee Ofset:	0 Bus		
Products:	ALL		
Default Calculator:	NONE		
Include:	Pricing Accounting Allocation	ETD	
	Transfer 🔲 Settlement Amount	Inventory Bucket: OTE	
Commenter	Open Trade Equity Reversal	🛷 Duplicate Transfer	
Comments:		Margin: Account Level 💌	Margin Category: OTE

### DISC\_FWD\_OTE

Calculated by the CLEARING\_VM\_CALC scheduled task it represents any discounted forward contract value. Discounted OTE is calculated only for Future product types when the contract's exchange is an LE whose MIC Attribute value equals "LME". This is hard coded in v15.

General			operaes
Type:	DISC_FWD_OTE		Key Value
Role:	CounterParty 👻		
PnL Category:		•	
Include:	V Pricing		
Comments:			
Trade fee parameters	3		
Fee Offset:	0 Cal		
Products:	ALL		ETD
Default Calculator:	NONE		Inventory Bucket: Discounted OTE 👻
Preferences:	Accounting Allocation		V Duplicate Transfer
	✓ Transfer Settlement Amount		Margin: Account Level 👻 Margin Category: OTE

### DISC\_FWD\_OTE\_REV

Calculated by the CLEARING\_VM\_CALC scheduled task it represents the reversal of the previous day's discounted forward contract value. Discounted OTE is calculated only for Future product types when the contract's exchange is an LE whose MIC Attribute value equals "LME". This is hard coded in v15.

General		Properties
Type:	DISC_FWD_OTE_REV	Key Value
Role:	CounterParty 👻	
PnL Category:		
Include:	V Pricing	
Comments:		
Trade fee parameters	s	
Fee Offset:	0 Cal	
Products:	ALL	<u>ETD</u>
Default Calculator:	NONE	Inventory Bucket: Discounted OTE 👻
Preferences:	Accounting Allocation	Duplicate Transfer
	✓ Transfer Settlement Amount	Margin: Account Level 🚽 Margin Category: OTE

# 3.7 Collateral Setup

The workflow below supports collateral processing for ETD Clearing.

Note that Cover Distribution should be executed by selecting the "Load, Calculate and Process" action and then the contracts are moved through the workflow STP based on the Collateral Context.

Id	Orig Status	Action	Resulting Status	Different User	Use STP	Priority	Log	Subtype	Product Type	Rules	Processing
332508	CALCULATED	CALCULATE	CALCULATED			0		ALL	ALL		ALL
332129	CALCULATED	PROCESS	PROCESSED		1	0		ALL	ALL		ALL
335425	CALCULATED	REFRESH	NONE			0	Г	ALL	ALL		ALL
335423	EXECUTED	CALCULATE	CALCULATED			0	Г	ALL	ALL		ALL
335424	EXECUTED	PROCESS	PROCESSED		Г	0	Г	ALL	ALL		ALL
335426	EXECUTED	REFRESH	NONE		Г	0	Г	ALL	ALL		ALL
332128	NONE	CALCULATE	CALCULATED			0	Γ	ALL	ALL		ALL
332507	NONE	PROCESS	PROCESSED		Г	0	Г	ALL	ALL		ALL
332510	PROCESSED	CALCULATE	CALCULATED			0	Γ	ALL	ALL		ALL
332130	PROCESSED	EXECUTE	EXECUTED		2	0		ALL	ALL	Execute	ALL
332509	PROCESSED	PROCESS	PROCESSED		Г	0		ALL	ALL		ALL
335427	PROCESSED	REFRESH	NONE			0	Г	ALL	ALL		ALL
335428	NONE	PRICE	PRICED_RECEIVE	E	Г	0	Г	ALL	ALL	<b>CheckReceive</b>	ALL
335429	PRICED_RECEIVE	ALLOCATE	ALLOCATED		2	0	Г	ALL	ALL	AutoAdjust	ALL
335430	ALLOCATED	EXECUTE	EXECUTED	Г		0	Г	ALL	ALL	Execute	ALL
335431	NONE	PRICE	PRICED_PAY		L.	0	Г	ALL	ALL	CheckPay	ALL
335433	NONE	PRICE	PRICED_NO_CALL			0	Г	ALL	ALL	CheckNoCall	ALL
335434	PRICED_NO_CALL	ALLOCATE	ALLOCATED		2	0		ALL	ALL	AutoAdjust	ALL
335435	PRICED_PAY	ALLOCATE	ALLOCATED		2	0	Г	ALL	ALL	AutoAdjust	ALL

The Collateral Context maps the "Load Calculate and Process" action with the workflow to move it to executed STP.

CONTRACTOR OF A DESCRIPTION OF A						_	-
Collateral Context Util 1	Help						
Name : Cov	er Distribution	107159	71 🔽 Default				
Description : def	ault collateral context		2.6.3-14.2.0.0-	with-1430			
Product Definition   Position	Definition Currency Definition	Entry Attributes Allocation	Attributes Worldlow Pricing	Context Attributes			
Product Definition   Position Workflow Subtype :	Definition Currency Definition	Entry Attributes   Allocation rkflow Product : F	Attributes Workflow Pricing	Context Attributes			
Product Definition   Position Workflow Subtype :	Definition   Currency Definition   1 From Contract V	Entry Attributes   Allocation rkflow Product : F	Attributes Workflow Pricing	Context Attributes		Ŧ	*
Product Definition Position Workflow Subtype :	Definition   Currency Definition   1 From Contract  We Status	Entry Attributes   Allocation ekflow Product : F Workflow Action	Attributes Worldlow Pricing	Context Attributes	\$ Produc	Ŧ	-

# 3.8 Engines Configuration

Engines are configured using the Engine Manager in Web Admin.

# 3.8.1 Liquidation Engine

Use the filter LiquidationEngineEventFilter.

# 3.8.2 Transfer Engine

The Transfer engine must subscribe to PSEventAggLiquidatedPosition events.

It should also use the VerifiedEventFilter.

The following engine parameters must be set:

- LIQUIDATION\_CONFIG = ETD Liq Config
- XFER\_NEXT\_EVENT = true

- XFER\_PAST\_GENERATION = true
- XFER\_POS\_AGGREGATION\_NAME = ETD Liq Keys
- XFER\_USE\_POS\_AGGREGATION\_ONLY = true
- XFER\_USE\_REVERSE = true

# 3.8.3 Margin Call Position Engine

Use the filter MarginCallEventFilter.

# 3.8.1 Accounting/CRE Engine

The Accounting engine must subscribe to  ${\sf PSEventAggLiquidatedPosition}$  events.

# Section 4. Legal Entities Configuration

# 4.1 Processing Organizations

### Summary

The primary information required for clearing processing on the Legal Entities is captured through the LE Attributes.

Note that attributes can be applied globally for all POs or can be set to different values per PO. For instance, I could set the DefaultCounterpartyAccount attribute on the Eurex legal entity to be 'X' for PO1 and 'Y' for PO2.

The Processing Organization represents the Clearing Broker operating the system.

The roles Age	nt and ProcessingOrg are mandate	ory.		
🌽 Legal Entity- V	ersion - 3 [144003/CLEARING_40/calypso_	userj		
Utilities Help				
Short Name	US FCM	:	Status	Enabled
Full Name	US FCM	F	Role(s)	Agent
Parent				CounterParty ProcessingOrg
Country	UNITED STATES			
Inactive As From	User bspota			
Entered Date	07/27/2015 8:58:30 AM			Triparty Substitutions
External Ref				
Holidays	NYC © Financial © Non Finan	cial		

It is mandatory to define at least one contact for settlement instructions.

### **Processing Org Attributes**

Attribute Name	Purpose/Impact
Client Clearing Book	Sets the Book on Trades based on the CCPOriginCode of the related Client Account.
House Clearing Book	Sets the Book on Trades based on the CCPOriginCode of the related Client Account.
Client Execution Book	Sets the Book on Cleared Trades based on the ServiceLevel keyword of the transaction for Client activity.
House Execution Book	Sets the Book on Cleared Trades based on the ServiceLevel keyword of the transaction for House activity
ClientErrorAccount	References the Account into which any trade which is entered or imported with an invalid account will be created.
Booking Date	The current processing date, set in format of mm-dd-yyyy. This date can be set manually and can also be rolled forward using the ROLL_BOOKINGDATE scheduled task

# 4.2 Client

The Client represents either the external (client) or proprietary (house) entity clearing through the PO.

The roles **Client** and **CounterParty** are mandatory.

🌽 Legal Entity- V	ersion - 0 [144003/CLEARING_40/calypso_user]
Utilities Help	
Short Name	SA TEST Status Enabled
Full Name	SA Trading Corp Role(s) Client
Parent	CounterParty
Country	NONE
Inactive As From	User santil
Entered Date	08/10/2015 1:53:24 PM Triparty Substitutions
External Ref	
Holidays	C Non Financial

It is mandatory to define at least one contact for settlement instructions.

There are no mandatory client attributes, since most client specific information is captured by the account definition.

# 4.3 Counterparty

The Counterparty represents the clearing house or Third Party Broker through which the PO clears and/or executes its client trades. The roles **CounterParty** and **Clearer** are mandatory.

🛃 Legal Entity	/- Version - 0 [144005/erste/admin]			
Utilities Hel	<b>o</b>			
Short Name	UBS CLEARING BROKER	Status	Enabled 🔹	
Full Name	UBS CLEARING BROKER	Role	Clearer	
Parent			CounterParty	
Country	Switzerland 🗾 🛄			
Inactive As Fr	User admin			
Entered Date	03/17/2017 10:27:09 AM		Triparty Substitutions	
External Ref				
Holidays		ial Nancial		
Attributes	Legal Agreement Contact	Rating	SDI's Netting Methods	
Custom	Registration Relation	Tolerance	Account	
Ref Ob	LE Id 6004	uthorization	Show Auth.	
Load	New Delete Save Save	As Upda	ate Short Name	Close

It is mandatory to define at least one contact for settlement instructions.

**Counterparty Attributes** 

Attribute Name	Purpose/Impact
DefaultHouseAccount	Sets the Counterparty Account to be used for a trade cleared by a House account, when the Counterparty Account is not provided on the trade capture. The value must match a valid Counterparty Account with the LE as the Account owner.
DefaultClientAccount	Sets the Counterparty Account to be used for a trade cleared by a Client account, when the Counterparty Account is not provided on the trade capture. The value must match a valid Counterparty Account with the LE as the Account owner.
DefaultExecutionAccount	Sets the Counterparty Account to be used for an execution only trade executed by the PO. The value must match a valid Counterparty Account with the LE as the Account owner.

# 4.4 Exchange

The Exchange represents the entity that facilitates the trading of the products cleared by the PO.

### The role **MarketPlace** is mandatory.

📕 Legal B	intity- Version - 5	[151010/MAR0	5INDEMO2	2/calypso_user]		
Utilities	Help					
Sho	rt Name EUREX				Status Enabled	<b>v</b>
F	ull Name Eurex				Role(s) MarketPlace	
	Parent					
	Country GERMANY			<b>▼</b>		
📕 Legal E	ntity Attributes W	/indow				
Q- Searc	:h					
Legal B	Entity EUREX	Ð		Role ALL	Processing Org	ALL
Attribute G	Group	<b>• •</b>	Attribute	Type ACCOU	- 🔁 Value	. ∋
Id	Processing Org	Legal Entity	Role	Attribute Group	Attribute Type	Attribute Value
301218	ALL	EUREX	ALL		ClearingHouse	EUREX CLEARING
301219	ALL	EUREX	ALL		DefaultCounterparty	EUREX CLEARING
301220	ALL	EUREX	ALL		MIC	XEUR
301221	ALL	EUREX	ALL		TimeZone	Europe/Paris

and the second second	tity-Version	1 [151010	/MARC	GINDEMO	2/calypso_user]			
ilities He	elp							
Short	Name ICE EUP					Status	Enabled	<u>.</u>
Full	Name ICE EUR	IFLL				Role(s)	MarketPlace	
F	Parent					1		
Co		KINGDOM			¥	7		
active As	s From		User	calypso_	user			
	In a lastente		11.0	7:35 AM				
Entered Legal En	tity Attribute	s Window	11:5	7.55 MPI				_10
Entered Legal En Q + Search	h	s Window	11:5	7.35 API		_		
Entered Legal En Q - Search Legal Er	h h h h h h h h h	s Window	911:5	7.55 AM	Role ALL	<u>.</u>	Processing C	Drg ALL
Entered Legal En Q - Search Legal Er ttribute Gr	htity Attribute	s Window	) () () () () () () () () () (	Attribute	Role ALL	- - 9	Processing C Val	rg ALL 💽
Entered Legal En C. Search Legal Er tribute Gr	h tity Attribute	s Window	] 🕀	Attribute	Role ALL	▼ ▼ €	Processing C Val	Drg ALL
Enterec Legal En Legal Er Legal Er tribute Gr Id 302720 A	h tity Attribute	s Window  Legal E ICE EUR	] Ə ] Ə	Attribute Role	Role ALL Type ACCOU Attribute Group	▼ ▼ € Attr	Processing C Val ibute Type fouse	Drg ALL
Enterec Legal En Legal Er Legal Er tribute Gr Id 302720 A 302723 A	h tity Attribute	s Window  Legal E  ICE EUR ICE EUR	] Ə	Attribute Role ALL ALL	Role ALL Type ACCOU Attribute Group	Attr Clearingt TimeZone	Processing C Val ibute Type fouse	ILE CLEAR EUROPE Europe/London
Enterec Legal En Legal Er Legal Er ttribute Gr 302720 A 302722 A 302722 A	h tity Attribute	S Window	] Ə	Attribute Role ALL ALL ALL	Role ALL Type ACCOU Attribute Group	Attr Clearingh TimeZoni DefaultC	Processing C Val ibute Type House e ounterparty	ALL



### Exchange Attributes

Attribute Name	Purpose/Impact
ClearingHouse	Indicates the Clearinghouse on which this exchange's products are cleared. The value should be the LE Short Name of a valid Counterparty.
MarginMethod	Sets the Initial Margin Calculation method for the exchange. This is set on the exchange rather than the Clearinghouse because some clearinghouses use different methodologies for different exchanges when they clear multiple exchanges.
	This attribute can be left blank, in which case it will default to the primary supported exchange methodology. The use can instruct the IM calculation to be done using simple strategy margining by entering a value of "Strategy" here
	See <u>Initial Margin Calculation</u> for details.
DefaultCounterparty	Indicates the Counterparty through which products on this exchange will be cleared for the indicated Processing Org. This allows the Counterparty of the cleared trade to be set if it's not provided in the trade capture process. This attribute allows the PO to indicate whether the

Attribute Name	Purpose/Impact
	products on this exchange are cleared directly on the Clearinghouse, or through a 3rd Party Broker.
МІС	The official Market Identification Code for this LE. This allows us to uniquely identify this exchange despite the users' choice of long or short name and is used to uniquely identify the exchange for our FOW interface and for SPAN calculations.
TimeZone	The Time Zone in which the exchange operates. Used for Last Trading Time.

Note that the attributes can be defined as associated to ALL Processing Orgs or to a specific PO. This is important, since in a multi-PO environment we expect all POs to use the same Exchange and Counterparty Legal Entities, but we also understand that some POs will clear a particular market on the clearinghouse, while others may set the DefaultCounteparty to a 3<sup>rd</sup> part broker. We should be able to define these attributes per PO and have the processing logic look for the specific PO name first, then look for the attribute associated to ALL POs.Executing Broker

The Executing Broker represents an entity that may execute transactions for the PO's clients, with the intent of giving the up to the PO to clear. The PO may also execute trades.

### The roles **Broker** and **CounterParty** are mandatory.

🜽 Legal Entity- V	/ersion - 0 [144003/CLEARING_40/calypso_user] 📃 🗖	х
Utilities Help		
Short Name	CONG_MGE Status Enabled	]
Full Name	Cong test for MGE Role(s) Broker	-
Parent	Counterparty	
Country	UNITED STATES	
Inactive As From	User czhang	
Entered Date	08/10/2015 5:55:29 PM Triparty Substitutions	1
External Ref		
Holidays	NYC C Financial	

# Section 5. Collateral Configuration

Collateral contracts hold the configuration that drives the calculation of margin excess/deficit and the generation of predictive margin calls facing clients and counterparties. Facing the client, we expect a single Deposit "clearing member config" contract which is compatible with the Cover Distribution Model to hold all of the cash and collateral that is not allocated to cover a margin requirement. Margin requirements are held in a separate child contract, and assets are moved between the two in order to attempt to meet the margin requirements.

This section will not go into deep detail of the configuration, as that is already documented in the Collateral documentation. This document will simply highlight the configurations that are critical to the clearing model.

# 5.1 Client Collateral – "Deposit Contract" for VM Settlement in Original Currency

To be able to settle the variation margin in the original trade currency we rely on the concept of a **Master margin call contract with Exposure Groups** per currency (or child contracts). Each transfer will be enriched with the contract id of the Exposure Group associated with the transfer currency. Each exposure group is a subset/child margin call contract. The Master is only defined to link these children contracts and is used as the Deposit Contract in the Clearing tab of the Client or Counterparty Account. This allows the system to link collateral information with the clearing account activity.

To define a Deposit Collateral Contract, go to the menu Margin Call and Choose the SubType Master. Then follow the steps below:

### Parties Tab

Field Name	Purpose/Impact
Processing Org	The PO Legal Entity that is managing the Client Account.
LE Role	Set this to ' <b>Counterparty</b> '.

Parties Details Dates & Times Exposure Groups Initial Margin Independent Amount Eligibility Concentration & Limits Optimization Configurations Ratings Additional Info

m ** **		Show Haircut	
Processing Org		ELegal Entity	
Role	ProcessingOrg	Role	CounterParty
Processing Org	US FOM	Legal Entity	CLIENTA
Full name	US FCM	Full name	CLIENTA
Collateral Type		Collateral Type	
Collateral Type	BOTH	Collateral Type	BOTH
Threshold		- Threshold	
Type	AMOUNT	Type	AMOUNT
Amount	0	Amount	0
Base Currency		Base Currency	
Percentage Basis		Percentage Basis	
Percentage	0	Percentage	0
Rating		Rating	
Value Basis	Net Value	Value Basis	Net Value
Minimum Transfer Amount		Minimum Transfer Amount	
Type	AMOUNT	Type	AMOUNT
Amount	0	Amount	0
Base Currency		Base Currency	
Percentage Basis		Percentage Basis	
Percentage	0	Percentage	0
Rating		Rating	
Value Basis	Net Value	Value Basis	Net Value
Rounding		Rounding	
Delivery Method	NONE	Delivery Method	NONE
Return Method	NONE	Return Method	NONE
Haircut		Haircut	
Haircut Rule		Haircut Rule	
Haircut Type	Regular	Haircut Type	Regular
Exclude Trade Haircut		Exclude Trade Haircut	
Termination/Settlement Currencies		Termination/Settlement Currencies	
Rehypothecation Rules		Rehypothecation Rules	
Enable Rehypothecation		Enable Rehypothecation	

### Details Tab

Field Name	Purpose/Impact
Products	ClearingTransfer.
Books	Should be set to the Book in which the client's trades are captured. The ETD model does not recommend multiple Books, especially not for a single client, so this should just be a single value.
Currencies	Any.

Field Name	Purpose/Impact
Start Date	This is used as the Trade Date of the Collateral Exposure trade generated from the contract. Set to a date in the past.
Position Type	THEORETICAL
Position Date	POSITION_DATE_DEFAULT
Contract Direction	NET-BILATERAL
End of Day/Intraday Pricing Environment	Set to the PE used for clearing activity.
Generate a Call	This is set to `True' if you want to generate a Margin Call

# Details Article Part of the contract details properties ■ \*\* t\* Cr-Type here to filter contract details properties ■ \*\* t\* Default Perimeter Type Default Bart Date Ditorition Bit Date Ditorition Subtpa ANY Bit Date Ditorition Subtpa OPEN Contact Type

Parties Details Dates & Times Exposure Groups Initial Margin Independent Amount Eligibility Concentration & Limits Optimization Configurations Ratings Additional Info

Sinddonneigenvoniere		oundans		
Include End Date Exposure				
Exclude Delivery Date Accruals				
Ignore MTA on Returned Margin				
Ignore MTA on Returned Margin below Threshold				
Rounding before MTA				V
Position Type		THEORETICAL		
Position Date		POSITION_DATE_DEFAULT		
-				
Director Tolerance	0			
Accest CP anount in PO's Favor	0		10	
Method	NONE			
Response Time				
Response Time Zone	Europe/London			
Alternative Procedure	NONE			
Resolution Time				
Resolution Time Zone	Europe/London			
Dispute Aging Start	T+1			

### Dates & Times Tab

Field Name	Purpose/Impact
Value Date Frequency	COL_MIGR_DAILY_BUS – A date rule which sets the processing date to business dates on the configured calendar.
Valuation Time Offset	COL_MIGR_VAL_REL - A date rule which is relative to the rule above and falls one business day prior. This sets the Collateral processing so that the process date is always T+1 based on end of day balances on T, and generates a Margin Call which is settled on T+1.
Valuation Time	Set to the same time as the Book EOD time.
Valuation Time Zone	Set to the same time zone as the Book.

-
#### Exposure Groups Tab

Field Name	Purpose/Impact
Details/Base Currency	Define an Exposure Group per Currency cleared on this client account and define the Base Currency as Exposure Group Currency. In the screenshot below, we define an Exposure Group for EUR and Define Base Currency = EUR. We need to do the same for each currency that the client account is clearing in order to generate a margin call per cleared currency.
Eligibility/Eligible Books	Inherit from the Master contract
Eligibility/Eligible Currencies	Add the Exposure Group Currency as eligible currency and define it as Adjustment Currency. Do the same for each Exposure Group you define per currency
Attributes	Define MARGIN_TYPE = VM and PRODUCT_TYPE = ETD

No other specificity to define at Exposure Group level for standard VM settled in the original trade currency. All elements not defined at the exposure group level are inherited from the Master

Parties Details Dates & Times Exposure Groups Initial Margin Independent Amount Eligibility Concentration & Limits Optimization Configurations Ratings Additional Info



Parties Details Dates & Ti	mes Exposure Gro	ups Initial Margin Inc	dependent Amount Eligibility Cor	ncentration & Limits Optimization Configuratio	ins Ratings Additional Info			
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1190		o coch poor r						
GBP		Details Doction						
PIN		Details For Uts	Triparty Details   Eligibility   Conce	intration & Limits   Butter   Attributes				
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		Processing (	Org			Threshold		
		Role		ProcessingOrg		Type	AMOUNT	
		Processing Or	rg	US FOM		Amount	0	
		Full name	-	US FCM		Base Currency		
		Threshold				Percentage Basis		
		Type		AMOUNT		Percentage	0	
		Amount		0		Rating		
		Base Currenc	γ.			Value Basis	Net Value	
		Percentage B	asis			Minimum Transfer Amount		
		Percentage		0		Туре	AMOUNT	
		Rating				Amount	0	
		Value Basis		Net Value		Base Currency		
		🖃 Minimum Tra	ansfer Amount			Percentage Basis		
		Type		AMOUNT		Percentage	0	
		Amount		0		Rating		
		Base Currenc	Y			Value Basis	Net Value	
		Percentage B	asis			Rounding		
		Percentage		0		Delivery Method	NONE	
		Rating				Return Method	NONE	
		Value Basis		Net Value		🗏 Haircut		
	Rounding				Haircut Rule			
		Delivery Meth	nod	NONE		Haircut Type	Regular	
		Return Metho	id	NONE		Exclude Trade Haircut		
		Haircut				Termination/Settlement Currencies		
		Haircut Rule				Rehypothecation Rules		
		Haircut Type		Regular		Enable Rehypothecation		
		Exclude Trade	e Haircut					
		Tanan in a bian A	Contration of the Company of the state					

Parties Details Dates & Times Exposi	ure Groups Initial Margin Inde	ependent Amount Eligibili	ty Concentration & Limits Opti	mization Configurations	Ratings Additio	nal Info
<b>91</b> 🖬 📪 🐻	1 IName :	EUR	5508			
III EUR	Description :					
III USD III GBP	Details Parties T	riparty Details Eligibility	Concentration & Limits Buffer	Attributes		
III PLN	Eligible Books Eli	gible Securities Eligible C	urrencies			
	9566	🗸 Inherit		1 1		
	Legal Entity Books	Filter Type	Value			
	Legal Entry books	riter type	Value			
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	Incoming Secur	ity Book Book				
	Outgoing Securi	ity Book				
	Use inventory so	ource book				
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Curre	ency Type Fixed Rate Index Fixed Rate 0.0000000	Tenor Source Spread	Factor Floor Floor Comp 10000.00 0.00	Currency Type Fixed Rat	te Index Tenor	Source Spread Factor Floor
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Currency : EUR	🗕 🗖 Cor	npounding	Include Interes	t to Position	🔽 Ac	justment Currency
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Parties	Details	Dates & Times	Exposure Groups	Initial Margin	Independent Amount	Eligibility	Concentration & Limits	Optimization	Configurations	Ratings	Additional Info	
Comme	nt:											
1												
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🗆 Othe	rs											
ACCO	DUNT_NA	ME										
CCP												
CCP_	ORIGIN_	CODE									CLIENT	
CCP_	REFEREN	ICE	-									
CCP_	SEGREG/	ATION_ACCOUNT										
CLIEF	COLLAT											
	ITE CON	AMENT MANDAT										
EYC	UDE REE	O INTERECT	ORT									
EXCL	UDE SEC	LENDING INTER	EST									
IGNO	RE ALLO	W EX DIVIDEND	1									
IM IN	PORT C	URRENCY										
INCLU	JDED VIV	1 FLOWS										
INTE	EGT_D/	TERULEONLY										
MAR	GIN_TYPE										VM	
PROE	UCT_TY	PE									ETD	
REIN	VEST_CC	DUPON										
SEPA	RATE_V	M_SETTLEMENT										
USE	RECONC	ILIATION										

#### Eligibility Tab – Eligible Books Sub-Tab

Enter incoming/ougoing Cash and Security Books for that PO.

## Eligibility Tab – Eligible Currencies Sub-Tab

Field Name	Purpose/Impact
Base Currency	Equal to the Base Currency of the Account. This currency is not used when contract is defined with Exposure Group per currency.
Cash MarginCall Account	True.
Security MarginCall Account	True.
Orderer Role	Set this to ' <b>Client</b> ' as this will trigger the generation of a second transfer on the Margin Call trade that will credit the internal client account when a client makes a payment.
Eligible Currencies	Leave it empty when using Exposure Group per Currency.

#### Additional Info Tab

Field Name	Purpose/Impact							
CCP_ORIGIN_CODE	Set to "HOUSE" or "CLIENT" (note caps) based on account status.							
MARGIN_TYPE	Set to "VM" for the Deposit Contract.							
PRODUCT_TYPE	Set to " <b>ETD</b> " for ETD accounts.							

You will then have to attach the Master VM contract to the Clearing tab on the Client Account as a Deposit Account (See Client Account section).

# 5.2 Client Collateral - Liability or IM Contract

The liability contract does not refer to exposure group as initial margin is settled in a unique/consolidated currency. The Eligible currency is therefore defined at the contract level as adjustment currency.

We only outline below the differences between the Deposit and Liability contract definition.

#### Details Tab

Field Name	Purpose/Impact							
Exposure Types	Initial Margin, Variation Margin. This ensures that collateral exposures that represent actual IM as well as those that represent OTE will be collected by the contract.							
Products	CollateralExposure.							

#### Additional Info Tab

Field Name	Purpose/Impact
PRODUCT_TYPE	Still set to ' <b>ETD'</b>
MARGIN_TYPE	Set to "IM" for the Liability Contract.

🗆 Others		
ACCOUNT_NAME		
CCP		
CCP ORIGIN CODE		
CCP_REFERENCE		
CCP. SEGREGATION ACCOUNT		
CLIENT TRANSFERS		
CYA COLLATERAL POLICY		
DISPUTE COMMENT MANDATORY		
EXCUDE CECIENTIAL STREET		
IM_IMPORT_CORRENCT		
INCLUDED_VM_FLOWS		
INTERSET_DATEOURSONAL		
MARGIN_TYPE	IM	
PRODUCT TYPE	ETD	
REBYEST COOPON		
SEPARATE VM SETTLEMENT		
USE RECONCILIATION		

#### Eligibility Tab - Eligible Currency Sub-Tab

We do not refer to Exposure group and define the IM payment currency as the unique eligible currency in the Eligible currency part of the IM contract. This currency is also defined as Adjustment Currency for that contract

Field Name	Purpose/Impact					
Base Currency	Set the IM Settlement Currency					
Orderer Role	Set Role ' <b>Client</b> ' as this will trigger the generation of a second transfer on the Margin Call trade that will credit the internal clearing account when a client makes a payment.					
Eligible Currency Set the IM Settlement Currency and define that currency as Adjustment Currency						
Parties Details Dates & Times Esposure Groups Initial Margin Independent Amount Eligible Books Eligible Securities Eligible Currencies	Eligibility Concentration & Limits Optimization Configurations Ratings Additional Info					

Contract Currency		
Base Currency	EUR	
Collateral Policy		
Settlement Cut-Off	0	
Interest		
Interest Type	Interest Bearing	
Interest Date Rule		
Interest Date Rule Only		
Roll Interest to Principal		
		(TOR)

Parties Det	ails Dates &	Times Expos	ure Groups	Initial Marg	in Independ	ent Amount	Eligibility Co	ncentration	8 Limits Opt	timization Con	igurations	Ratings	Additional Info						
Eligible Bool	s Eligible Se	ecurities Eligi	ble Currenci	es															
= : 만:																			
Settleme	nt Cut-Off											(	)						
Interest Interest	who.											,	interact Reprine						
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Interest D	ate Rule Onl	<u>у</u>																	
Cash Mar	ginCall Accou	an Int																	1
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	-											-							
Currency	Туре	Fixed Rate	Index	Tenor	Source	Spread	Factor	Floor	Floor	Compound	Included	Projec	Currency	Туре	Fixed Rate	Index	Tenor	Source	Spread
EUR	Fixed Rate	0.0000000				0	10000.00		0.00										
🛓 Elig	ible Curr	rency Def	inition									×							
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Curren	cy: EUR	l	- 🗌 🔿	Compound	ding 🛽	📃 Include	e Interest '	to Positic	n 🛛 🔽	🖊 Adjustme	nt Currer	су							
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Accour	it:							4											
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0.00	00000000																		
								A	pply	С	ancel								

You will then have to attach the IM contract to the Clearing tab on the Client Account as a Liability Account (See Client Account section).

# 5.3 Counterparty Collateral – Variation Margin Contract

The counterparty VM contract is defined using Master Contract and Exposure Group, similarly to what we do on the client side. Only the Role used in the parties and eligibility tab are different. See details below.

#### Parties Tab

Field Name	Purpose/Impact
Processing Org	The PO Legal Entity that is clearing through the Counterparty Account.
Legal Entity	The Clearer (clearinghouse or carry broker).
LE Role	Set this to ` <b>Clearer</b> '.

Parties Details Dates & Times Exposure Groups Initial Margin Independent Amount Eligibility Concentration & Limits Optimization Configurations Ratings Additional Info

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E Processing Org			E Legal Entity					
Role	ProcessinaOra		Role	Clearer				
Processing Org	US FCM		Legal Entity	UBS CLEARING BROKER				
Full name	US ECM	<u></u>	Full name	UBS CLEARING BROKER				
E Collateral Type			E Collateral Tune					
Collateral Type	BOTH		Collateral Type	BOTH				
Threshold			E Threshold					
Type	AMOUNT		Type	AMOUNT				
Amount	0		Amount	0				
Base Currency			Base Currency					
Percentage Basis			Percentage Basis					
Percentage	0		Percentage	0				
Rating			Rating					
Value Basis	Net Value		Value Basis	Net Value				
Minimum Transfer Amount		Minimum Transfer Amount						
Туре	AMOUNT		Type	AMOUNT				
Amount	0		Amount	0				
Base Currency			Base Currency					
Percentage Basis			Percentage Basis					
Percentage	0		Percentage	0				
Rating			Rating					
Value Basis	Net Value		Value Basis	Net Value				
Rounding			Rounding					
Delivery Method	NONE		Delivery Method	NONE				
Return Method	NONE		Return Method	NONE				
Haircut			⊟ Haircut					
Haircut Rule			Haircut Rule					
Haircut Type	Regular		Haircut Type	Regular				
Exclude Trade Haircut			Exclude Trade Haircut					
Termination/Settlement Currencies			Termination/Settlement Currencies					
Rehypothecation Rules			Rehypothecation Rules					
Enable Rehypothecation			Enable Rehypothecation					

# Details Tab

Field Name	Purpose/Impact
Products	ClearingTransfer.
Books	Should be set to the Book in which trades are captured. The ETD model does not recommend multiple Books, especially not for a single client, so this should just be a single value.
Currencies	Any.
Contract Type	VM
Status	OPEN
Contract Direction	NET-BILATERAL
Position Type	THEORETICAL
Position Date	POSITION_DATE_DEFAULT
End of Day/Intraday Pricing Environment	Set to the PE used for clearing activity.
Generate a Call	This is set to 'True' if you want to generate a Margin Call

## Dates & Times Tab

Field Name	Purpose/Impact
Value Date Frequency	COL_MIGR_DAILY_BUS – A date rule which sets the processing date to business dates on the configured calendar.
Valuation Time Offset	COL_MIGR_VAL_REL - A date rule which is relative to the rule above and falls one business day prior. This sets the Collateral processing so that the process date is always T+1 based on end of day balances on T, and generates a Margin Call which is settled on T+1.
Valuation Time	Set to the same time as the Book EOD time.
Valuation Time Zone	Set to the same time zone as the Book.

#### Exposure Groups Tab

Field Name	Purpose/Impact
Details/Base Currency	Define an Exposure Group per Currency cleared on this CCP/Clearer account and define the Base Currency as Exposure Group Currency. In the screenshot below, we define an Exposure Group for EUR and Define Base Currency = EUR. We need to do the same for each currency that the CCP/Clearer account is clearing in order to generate a margin call per cleared currency.
Eligibility/Eligible Books	Inherit from the Master contract

Field Name	Purpose/Impact
Eligibility/Eligible Currencies	Add the Exposure Group Currency as eligible currency and define it as Adjustment Currency. Do the same for each Exposure Group you define per currency
Attributes	Define MARGIN_TYPE = VM and PRODUCT_TYPE = ETD
CCP ORIGIN CODE	CLIENT/HOUSE

No other specificity to define at Exposure Group level for standard VM settled in the original trade currency. All elements not defined at the exposure group level are inherited from the Master

Name :	UBS - VM Ma	ster	5501 1						Master	•			
Description :	UBS - VM Ma	ster					Parent :						
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			Percentage				0				Delivery Method	NONE	
			Rating Value Basis				Not Voluo				Return Method	NONE	
			Rounding				nec value				Hairout Rule		
			Delivery Metho	d			NONE				Haircut Type	Regular	
			Return Method				NONE				Exclude Trade Haircut		
			Haircut Rule								Rebynothecation Rules		
			Haircut Type				Regular				Enable Rehypothecation		
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# ETD Clearing Setup Guide

🗆 Others	
ACCOUNT_NAME	
CCP	
CCP_ORIGIN_CODE	CLIENT
CCP_REFERENCE	
CCP_SEGREGATION_ACCOUNT	
CLIENT_TRANSFERS	
CVA_COLLATERAL_POLICY	
DISPUTE_COMMENT_MANDATORY	
EXCLUDE_REPO_INTEREST	
EXCLUDE_SECLENDING_INTEREST	
IGNORE_ALLOW_EX_DIVIDEND	
IM_IMPORT_CURRENCY	
INCLUDED_VM_FLOWS	
INTEREST. DATERULEONLY	
MARGIN_TYPE	VM
PRODUCT_TYPE	ETD
REINVEST_COUPON	
SEPARATE_VM_SETTLEMENT	
USE_RECONCILIATION	

## Eligibility Tab – Eligible Books Sub-Tab

Enter incoming/ougoing Cash and Security Books for that PO.

#### Eligibility Tab – Eligible Currency Sub-Tab

Field Name	Purpose/Impact
Base Currency	Equal to the Base Currency of the Account. This currency is not used when contract is defined with Exposure Group per currency.
Cash MarginCall Account	True.
Security MarginCall Account	True.
Orderer Role	Set this to ' <b>CounterParty</b> ' as this will trigger the generation of a second transfer on the Margin Call trade that will credit the internal clearer account when a client makes a payment.
Eligible Currencies	Leave it empty when using Exposure Group per Currency.

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Name :	UBS - VM Master		5501	1	Subtype :		Master	•							
Description :	UBS - VM Master				Parent :										
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Interest Date R	ule Only														
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Orderer Role						C	CounterParty								
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## Additional Info Tab

Field Name	Purpose/Impact
MARGIN_TYPE	VM
PRODUCT_TYPE	ETD
CCP_ORIGIN_CODE	HOUSE/CLIENT

# 5.4 Counterparty Collateral – Initial Margin Contract

Facing the Counterparty, we will use the same bilateral collateral model than facing the client. We will specify the Margin Call contract in the setup of the Counterparty Account.

### <u>Parties Tab</u>

Field Name	Purpose/Impact
Processing Org	The PO Legal Entity that is clearing through the Counterparty Account.
Legal Entity	The Clearer (clearinghouse or carry broker)
LE Role	Set this to ' <b>Clearer</b> '.

#### Details Tab

Field Name	Purpose/Impact
Products	CollateralExposure.
Books	Should be set to the Book in which the trades are captured. The ETD model does not recommend multiple Books, especially not for a single client, so this should just be a single value.
Currencies	Any.
Start Date	This is used as the Trade Date of the Collateral Exposure trade generated from the contract. Set to a date in the past.
End of Day/Intraday Pricing Environment	Set to the PE used for clearing activity.
Contract Type	IM
Contract Direction	NET-BILATERAL

## Dates & Times Tab

Field Name	Purpose/Impact
Value Date Frequency	COL_MIGR_DAILY_BUS – A date rule which sets the processing date to business dates on the configured calendar.

Field Name	Purpose/Impact
Valuation Time Offset	COL_MIGR_VAL_REL - A date rule which is relative to the rule above and falls one business day prior. This sets the Collateral processing so that the process date is always T+1 based on end of day balances on T, and generates a Margin Call which is settled on T+1.
Valuation Time	Set to the same time as the Book EOD time.
Valuation Time Zone	Set to the same time zone as the Book.

### Eligibility Tab - Eligible Currency Sub-Tab

We do not refer to Exposure group and define the IM payment currency as the unique eligible currency in the Eligible currency part of the IM contract. This currency is also defined as Adjustment Currency for that contract.

Field Name	Purpose/Impact
Base Currency	Set the IM Settlement Currency
Orderer Role	Set Role ' <b>CounterParty</b> ' as this will trigger the generation of a second transfer on the Margin Call trade that will credit the internal clearing account when a client makes a payment.
Eligible Currency	Set the IM Settlement Currency and define that currency as Adjustment Currency.

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ligible Currency Definition		<b>×</b>
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Fixed Rate     Floating Rate		
0.000000000		
	Apply	Cancel

#### Additional Info Tab

Field Name	Purpose/Impact
MARGIN_TYPE	IM
PRODUCT_TYPE	ETD

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	SEP/4	RATE_VI	VI_SETTLEMENT									

You will then have to attach the IM contract to the Clearing tab on the CounterParty Account as a Liability Account (See Client Account section).

# Section 6. Account Configuration

# 6.1 Client Account Configuration

# 6.1.1 Standard Client Account

A standard client account is a single account designed to manage all of the activity, positions and balances for a client LE. This is the simplest account, with no family structure involved.

#### "Account" Tab

Accounts Definition - Authorization mode OFF Client 1 Erste Final / 6024 - version 0											
Account Utilities Reports Process Help											
Account Name CLIENT A @ US FCM											
Processing Org OS FUM CCY AUTO V Id 6024											
Type SETTLE   SubType Clearing   Auto/Template Acc	X										
External Name Q Interface Rule Aggregate	Key	Value									
	AccountStructure	-									
Description	AccountType	<b>~</b>	=								
Legal Entity (F2) CLIENTA Role Client	AssignmentMethod	<b>*</b>									
	CATradeDDAInternal	<b>*</b>									
Creation Date 3/17/17 3:27:29 PM	CFTCAccountNumber										
Closing Account	CFTCNetGrossReportingFlag	<b>•</b>									
	CFTCSubAccount										
Parent Account Parent Id 0	ClearingCashAccount		<b>T</b>								
Balance       Status     Active       Active From     03/17/2015       Active To     Interest Bearing       by Trade Date     Billing											
New Delete Save SaveAsNew CustomerTransfer			Close								

Field Name	Purpose/Impact
Account Name	The unique identifier of the Account in the Books and Records. User Entered using whatever naming convention the user prefers.
Processing Org	The PO who is managing this account.
Ссу	Set to AUTO. Note, "Auto/Template Acc" must be checked for AUTO to appear in the Ccy menu.
Туре	Set to SETTLE.
SubType	Set to Clearing for a Client Account. This activates the Clearing tab of the Account.
Auto/Template Acc	Check this field to create automatic accounts in each settlement currency.
External Name	Optional field which can be used to provide a secondary name to the account for reporting and display.

Field Name	Purpose/Impact
Description	Optional field which can be used to provide additional information for reporting and display.
Legal Entity	The Client LE who this account is opened on behalf of.
Role	Set to <b>Client</b> .
Create by Acc Engine only	Check this field to suppress the automatic accounts from being searchable.
Status	Displays the status of an account. Processing and reporting can use this field to include or exclude an account from processing events. Only accounts in active status are eligible to be seen in the pricing sheet.
	Status must be set to Active to be able to select the account for clearing activity.

#### "Attributes" Tab

This is a user configurable tab which sets the naming convention of the automatically created accounts (created since 'Auto/Template Acc' is checked). It is mandatory to have some configuration here. Define your attributes based on the naming convention you want to use when generating your settlement postings.

Account Statements Attributes Interests Limits Consolidat	Translation/Revaluation Clearing Browse	
Order	Attribute	Value
1	- Book	
2	<ul> <li>XferCcy</li> </ul>	
3	<ul> <li>XferAccount</li> </ul>	

#### "Statement" Tab

Daily Statement using Settle (Frozen) position date to include back dated changes management and CLEARING\_ETD\_STATEMENT message configuration.

Account S	Statements Attrib	utes Interests	Limits Consolida	ation Trans	slation/Re	valuation Clearing	Browse							
	S	atement Type	Clearing 🔻											
Froz	uoncy: Doily		-										Add	
	dency. Daily		-										Update	,
Position	n Type: Actual				<b></b>									
Positio	n Date: Settle (I	rozen)			•								Remov	3
Active	From:		To:										General	е
Message	Config: 5307													
	Message	Type: CLEARIN	IG_ETD_STATEME	NT										
	Tem	plate: CalypsoE	ETDStatement.xsl											
	Fo	rmat: HTML												
	Gat	eway: FILE												
	Last State	ment:												
	1								1					_
Config Id	Statement Type	Numbering	Last Statement	Zero Bal	No Mvt	Client Statement G	eneration	Active From	Active To	Position Cash/Sec	Position Class	Position Type	Position Date	Pos
6025	Clearing										Client		Settle (Frozen)	

Account Statements Attributes Interests Limit	s Consolidation Translation/Revaluation Clearing Browse				
Properties					
Base Currency: EUR  Activity Type: Hedge  Origin Code: Client					
Margining					
🗸 Collateral	🗙 Has Children				
Margin Mode: Realized VM 🔹	Risk Setting				
Deposit: CLIENT A VM Master (5801)	Multiplier Netting				
Liability: Client A - IM - EUR(5806)	1 Net 🔶				
Account Hierarchy					
Parent:					

Field Name	Purpose/Impact
Base Currency	Represents the base currency for the account, used to convert balances in the client statement to a single currency.
Activity Type	Select either hedge or speculator. This field can impact the way initial margin is calculated for the account.
Origin Code	For a client account select "Client", and for house/proprietary accounts select "House".
Collateral	Checked to true for Standard Client Account since this is the account through which margin payments will be settled.
Child Account Indicator	Checked to false for Standard Client Account. By definition, this account type will not have any children.
Margin Mode	Select between "OTE" (open trade equity) and "Realized VM" modes to drive how unrealized PL is treated in the account, statement and margin call calculation.
Deposit Contract	References the Deposit ('VM') Contract configured for this LE to aggregate the assets and balances used in the margin calculation. Attach the <u>Master collateral contract to the</u> <u>account</u> . This contract is used to link the clearing account activity to each exposure group/child contract for the settlement of the variation margin in the original currency.
Liability Contract	References the Liability ('IM') Contract configured for this LE to aggregate their margin requirements. Attach the unique IM contract to the account. This contract is used to create the collateral exposure trades for this account.
Risk Setting – Multiplier	User entered value which can be used to mark up the Margin Requirement calculation. Default value is 1.0 which implies no markup (multiply calculated margin by 1). Value can be greater than or less than 1.
Risk Setting - Netting	Indicates how to calculate risk on the positions in this account:
	<ul> <li>'Net' will calculate risk on all positions in the account taking into account any risk offsetting available in the methodology.</li> </ul>
	• 'Gross' will calculate risk on each position in the account individually.
Parent	Empty for Standard Client Account

Field Name	Purpose/Impact
Status	Status must be set to Active to be able to select the account for clearing activity.

# 6.1.2 Parent Client Account

# "Account" Tab

The fields on the Account tab for a Parent Account follow the same rules as a Standard Account.

#### "Attributes" Tab

The fields on the Attributes tab for a Parent Account follow the same rules as a Standard Account.

🔀 Accounts Definition - Authorization mode OFF SW	TY3-P / 21805 - versior	4			
Account Utilities Reports Process Help					
Account Statements Attributes Interests Limits Consolidation Translation/Revaluation Clearing Browse					
Properties					
Base Currency: USD 👻 Activity Type: Hedge	Origin Code: Client	•			
Margining					
🛷 Collateral	🖋 Has Children 🛭 🛷 is	Grouping			
Margin Mode: Realized VM 🚽 Margin Group For Children					
Deposit: SWTY3 Deposit contract(15804)	<b>4 X</b>				
Liability: SWTY3 Liability Contract(15805)	Name	Multiplier	Netting		
	MG1	1.5	Gross		
	MG2	1.2	Net		
Account Hierarchy					
Parent:					

Field Name	Purpose/Impact
Base Currency	Represents the base currency for the account, used to convert balances in the client statement to a single currency.
Activity Type	Select either hedge or speculator. This field can impact the way initial margin is calculated for the account.
Origin Code	For a client account select "Client", and for house/proprietary accounts select "House".
Collateral	Checked to true for Parent Account since this is the account through which margin payments will be settled.

Field Name	Purpose/Impact
Child Account Indicator	Checked to true for Parent Account. By definition, this account type will have one or more associated child accounts.
Child Account Grouping Indicator	If set to false, the child accounts underneath this parent will all behave independent of each other in terms of margin calculation. If set to true, this field allows the PO to create a child account grouping structure which could allow margin to be calculated across one or more child accounts. When set to true, the Risk Setting panel is exposed for the user to configure the appropriate grouping.
Margin Mode	Select between "OTE" (open trade equity) and "Realized VM" modes to drive how unrealized PL is treated in the account, statement and margin call calculation.
Deposit Contract	References the Deposit Contract configured for this LE to aggregate the assets and balances used in the margin calculation across all child accounts.
Liability Contract	References the Liability Contract configured for this LE to aggregate their margin requirements across all margin groups.
Risk Setting - Name	When child account grouping is activated, this field represents the name of a Margin Group into which a child account can be placed. For a single parent account with multiple margin groups, all margin group names must be unique.
Risk Setting – Multiplier	User entered value which can be used to mark up the Margin Requirement calculation for each defined Margin Group. Default value is 1.0 which implies no markup (multiply calculated margin by 1). Value can be greater than or less than 1.
Risk Setting - Netting	<ul> <li>Indicates how to calculate risk on the positions in each Margin Group:</li> <li>`Net' will calculate risk on all positions across all child account belonging to the Margin Group, taking into account any risk offsetting available in the methodology.</li> <li>`Gross' will calculate risk on each position in the accounts belonging to the Margin Group individually.</li> </ul>
Parent	Empty for Parent Account.
Status	Status must be set to Active to be able to select the account for clearing activity.

# 6.1.3 Child Client Account

### "Account" Tab

The fields on the Account tab for a Parent Account follow the same rules as a Standard Account.

# "Attributes" Tab

The fields on the Attributes tab for a Parent Account follow the same rules as a Standard Account.

Z Accounts Definition - Authorization mode OFF SWTY3-C1 / 21809 - version 4
Account Utilities Reports Process Help
Account Statements Attributes Interests Limits Consolidation Translation/Revaluation Clearing Browse
Properties
Base Currency: USD 🗸 Activity Type: Hedge 🗸 Origin Code: Client 🗸
Margining
🔀 Collateral
Account Hierarchy
Parent: SWTY3-P (21805) 👻 Parent Margin Group: MG1 👻

Field Name	Purpose/Impact
Base Currency	Represents the base currency for the account, used to convert balances in the client statement to a single currency.
Activity Type	Select either hedge or speculator. This field can impact the way initial margin is calculated for the account.
Origin Code	For a client account select "Client", and for house/proprietary accounts select "House".
Collateral	Checked to false for a Child Account, since only positions will be managed at this level.
Parent	Mandatory field which references the Parent Account to which the account is associated. Restricted to Parents Accounts with the same LE and PO.
Parent Margin Group	References the Margin Group to which the account belongs. Restricted to Margin Groups defined on the selected Parent Account. This field is mandatory only if the Parent Account 'Child Grouping' setting is set to true.
Status	Status must be set to Active to be able to select the account for clearing activity.

# 6.2 Client Execution Account

This account manages trades which the PO executes then gives up to another clearing broker. By selecting a subtype of 'Execution' the Clearing tab is not activated so there is no configuration allowed/required on that tab.

"Account" Tab

🔀 Accounts Definition -	- Authorization mode OFF US-ALP-EX / 4126 - version 1			
Account Utilities Re	eports Process Help			
Account Statements A	ttributes Interests Limits Consolidation Translation/Revaluation Clearing Browse			
Account Name	US-ALP-EX			
Processing Org	US FCM   Ccy AUTO  Id 4126			
Туре	SETTLE   SubType Execution   Auto/Template Acc	×		
External Name	ALBHA Execution Account	Key	Value	$\sim$
External Name		AccountType	<b>-</b>	
Description	ALPHA Execution Account	CATradeDDAInternal	<b>v</b>	
		CME CLEARING GROUPDefaultCptyAcct		Ξ
Legal Entity (F2)	ALPHA Role Client V	ClearingCashAccount		
Creation Date	4/23/15 7:52:36 AM Create by Acc Engine only	DTCPartAccountID		
		Description	▼	
Closing Account	··· Last Closing Date	EUREX CLEARINGDerautCptyAcct		
Parent Account	Parent Id 0	InitialDenositAmount		-
Parone Account	- Packing o	and ab open and and		<u> </u>
Balance				
Status	Active			
Active From	Retroactivity			
		terest Bearing		
Active To		_		
🔲 by Trade Date	. B	lling		

Field Name	Purpose/Impact
Account Name	The unique identifier of the Account in the Books and Records. User Entered using whatever naming convention the user prefers.
Processing Org	The PO who is managing this account.
Ссу	Set to AUTO. Note, "Auto/Template Acc" must be checked for AUTO to appear in the Ccy menu.
Туре	Set to SETTLE.
SubType	Set to Execution. This will not activate the Clearing tab of the Account and this account will not participate in EOD processing.
Auto/Template Acc	Check this field to create automatic accounts in each settlement currency.
External Name	Optional field which can be used to provide a secondary name to the account for reporting and display.
Description	Optional field which can be used to provide additional information for reporting and display.
Legal Entity	The Client LE who this account is opened on behalf of.
Role	Set to Client
Create by Acc Engine only	Check this field to suppress the automatic accounts from being searchable.
Status	Displays the status of an account. Processing and reporting can use this field to include or exclude an account from processing events.
	Status must be set to Active to be able to select the account for clearing activity.

# 6.3 Counterparty Account Configuration

Counterparty accounts represent the accounts managed by the central counterparty into which the clearing member is sending their clients' trades. These entities can be actual clearinghouses or may be other clearing brokers acting as 3<sup>rd</sup> party clearers. The configuration of the accounts is identical in either case.

# 6.3.1 Standard Counterparty Account

#### "Account" Tab Fields

Accounts Definition - Authorization mode OFF UBS CLIENT / 6007 - version 1		_ (	×	
Account Utilities Reports Process Help				
Account Statements Attributes Interests Limits Consolidation Translation/Revaluation Clearing Browse				
Account Name UBS CLIENT Call Account				
Processing Org US FCM   Ccy AUTO  Id 6007				
Type SETTLE  SubType Clearing  Auto/Template Acc	Ì			
External Name UBS CLIENT 🛛 🖸 Interface Rule Aggregate 👻 Key	ay .	Value	☆	
Acc	countStructure	<b>*</b>		
Acc	countType	*	=	
Legal Entity (F2) UBS CLEARING BROKER Role CounterParty 🗸 Ass	signmentMethod	*		
Craption Data 17/17 10:41:54 AM	TradeDDAInternal	<b>*</b>	_	
	TCAccountNumber		-	
Closing Account Last Closing Date	T UNETUROSSREportingHag	*	-	
Parent Account Parent Id 0 Cle	aringCashAccount		-	
Balance				
Status Active -				
Retroactivity				
Active From 03/17/2013	t Bearing			
Active To	-			
by Trade Date				
New Delete Save SaveAsNew CustomerTransfer			Close	

Field Name	Purpose/Impact
Account Name	The unique identifier of the Account in the Books and Records, typically set to match the name of the account at the CCP.
Processing Org	The PO to whom this account is created at the CCP or Clearing Broker
Ссу	Set to AUTO. Note, "Auto/Template Acc" must be checked for AUTO to appear in the Ccy menu.
Туре	Set to SETTLE.
SubType	Set to Clearing for a Counterparty Account. This activates the Clearing tab of the Account.
Auto/Template Acc	Check this field to create automatic accounts in each settlement currency.
External Name	Optional field which can be used to provide a secondary name to the account for reporting and display.
Description	Optional field which can be used to provide additional information for reporting and display.
Legal Entity	The Counterparty LE who this account is opened on behalf of.

Field Name	Purpose/Impact
Role	Set to <b>CounterParty</b> .
Create by Acc Engine only	Check this field to suppress the automatic accounts from being searchable.
Status	Displays the status of an account. Processing and reporting can use this field to include or exclude an account from processing events. Status must be set to Active

# "Attributes" Tab

The fields on the Attributes tab for a CounterParty Account follow the same rules as a Client Account.

🔀 Accounts Defin	ition - Authorization n	node OFF UBS CLIEI	NT / 6007 - version 1
Account Utilities	s Reports Process	Help	
Account Statement	s Attributes Interests II	imits Consolidation	Translation/Revaluation Clearing Browse
Droportion			
Properties			
Base Currency: 📃	JR 🔻 Activity Type: Hed	ge 🔻 Origin Code	le: Client 💌
Margining			
🗸 Collateral		💢 Has Children	
Margin Mode: Rea	alized VM 🔹	Risk Setting	
Deposit: UBS	6 - VM Master(5501)	Multiplier	Netting
			1 Not
Liability: OBS	5 - IM(5506)		Ilver -
Account Hierarchy Parent:	T		
Z Deposit Config Selector			×
Q-1			
<u> </u>			
Id	Name	Description	
5501	UBS - VM Master UBS - VM Master   EUR	UBS - VM Master UBS - VM Master   EUR	
5503	UBS - VM Master   USD	UBS - VM Master   USD	
5504	UBS - VM Master   GBP	UBS - VM Master   GBP	
5505	UBS - VM Master   PLN	UBS - VM Master   PLN	
5702	UBS - VM Master House	UBS - VM Master House I	
5703	UBS - VM Master House   USD	UBS - VM Master House	
5704	UBS - VM Master House   GBP	UBS - VM Master House	
5/05	OBS - VIVI Master House   PLN	UBS - VM Master House (	*
		Select Cancel	

Field Name	Purpose/Impact	
Base Currency	Represents the base currency for the account.	
Activity Type	Always set this to Hedge for CounterParty Accounts.	
Origin Code	For a counterparty account containing client positions select "Client", and for one containing house/proprietary positions select "House".	
Collateral	Checked to true for Standard Counterparty Account since this is the account through which margin payments will be settled.	
Child Account Indicator	Checked to false for Standard Counterparty Account. By definition, this account type will not have any children.	
Margin Mode	Should always be set to "Realized VM" for counterparty accounts.	
Deposit Contract	References the Deposit ('VM') Contract configured for this LE to aggregate the assets and balances used in the margin calculation. Attach the <u>Master collateral contract to the</u> <u>account</u> . This contract is used to link the clearing account activity to each exposure group/child contract for the settlement of the variation margin in the original currency.	
Liability Contract	References the Liability ('IM') Contract configured for this LE to aggregate their margin requirements. Attach the unique IM contract to the account. This contract is used to create the collateral exposure trades for this account.	
Risk Setting – Multiplier	Always set to 1 for Counterparty Accounts	
Risk Setting - Netting	Indicates how to calculate risk on the positions in this account:	
	• 'Net' will calculate risk on all positions in the account taking into account any risk offsetting available in the methodology.	
	• 'Gross' will calculate risk on each position in the account individually.	
	• 'Disclosed' will calculate risk based on the client account position groupings. This setting allows the CCP to calculate risk on omnibus accounts with the understanding that some of the positions belong to the same end client and should get the benefit of risk offsetting.	
Parent	Empty for Standard Counterparty Account.	
Status	Displays the status of an account. Status must be set to Active to be able to select the account for clearing activity.	

# 6.3.2 Parent Counterparty Account

# "Account" Tab

The fields on the Account tab for a Parent Account follow the same rules as a Standard Account

### "Attributes" Tab

The fields on the Attributes tab for a Parent Account follow the same rules as a Standard Account

Account Staten	nents Attributes Interests	Limits	Consolidation	Translation/Revaluation	Clearing	Browse
Properties						
Base Currency	EUR Activity Type: H	edge	▼ Origin Cod	e: Client 💌		
Margining						
🛷 Collatera			🛷 Has Child	ren 🛷 is Grouping		
Margin Mode: Realized VM  Margin Group For Children			Margin Group For Children			
Deposit:	Earex master Account on (11					
Liability:	Eurex Master Account IM(11)	09)	Name	Multiplier		Netting
			AA	1		1 Disclosed
			PP			1 Net

Field Name	Purpose/Impact
Base Currency	Represents the base currency for the account.
Activity Type	Always set this to Hedge for CounterParty Accounts.
Origin Code	For a counterparty account containing client positions select "Client", and for one containing house/proprietary positions select "House".
Collateral	Checked to true for Parent Account since this is the account through which margin payments will be settled.
Child Account Indicator	Checked to true for Parent Account. By definition, this account type will have one or more associated child accounts.
Child Account Grouping Indicator	If set to false, the child accounts underneath this parent will all behave independent of each other in terms of margin calculation.
	If set to true, this field allows the PO to create a child account grouping structure which could allow margin to be calculated across one or more child accounts. When set to true, the Risk Setting panel is exposed for the user to configure the appropriate grouping.
Margin Mode	Should always be set to "Realized VM" for counterparty accounts because they do not differentiate between realized and unrealized PL.
Deposit Contract	References the Deposit ('VM') Contract configured for this LE to aggregate the assets and balances used in the margin calculation. Attach the <u>Master collateral contract to the</u> <u>account</u> . This contract is used to link the clearing account activity to each exposure group/child contract for the settlement of the variation margin in the original currency.
Liability Contract	References the Liability ('IM') Contract configured for this LE to aggregate their margin requirements. Attach the unique IM contract to the account. This contract is used to create the collateral exposure trades for this account.

Field Name	Purpose/Impact	
Risk Setting - Name	When child account grouping is activated, this field represents the name of a Margin Group into which a child account can be placed. For a single parent account with multiple margin groups, all margin group names must be unique.	
Risk Setting – Multiplier	Always set to 1 for Counterparty Accounts.	
Risk Setting - Netting	<ul> <li>Indicates how to calculate risk on the positions in this account.</li> <li>'Net' will calculate risk on all positions in the account taking into account any risk offsetting available in the methodology.</li> <li>'Gross' will calculate risk on each position in the account individually.</li> <li>'Disclosed' will calculate risk based on the client account position groupings. This setting allows the CCP to calculate risk on omnibus accounts with the understanding that some of the positions belong to the same end client and should get the benefit of risk offsetting.</li> </ul>	
Parent	Empty for Parent Account.	
Status	Displays the status of an account. Status must be set to Active to be able to select the account for clearing activity.	

# 6.3.3 Child Counterparty Account

### "Account" Tab

The fields on the Account tab for a Child Account follow the same rules as a Standard Account.

### "Attributes" Tab

The fields on the Attributes tab for a Child Account follow the same rules as a Standard Account.

Accounts Definition - Authorization mode OFF EUREX A1 / 3677 - version 1				
Account Utilities Reports Process Help				
Account Statements Attributes Interests Limits Consolidation Translation/Revaluation Clearing Browse				
Properties				
Base Currency: EUR 🗸 Activity Type: Hedge 🗸 Origin Code: Client 🗸				
Margining				
× Collateral				
Account Hierarchy				
Parent: EUREX MASTER A 👻 Parent Margin Group: 🗛 👻				

Field Name	Purpose/Impact
Base Currency	Represents the base currency for the account.
Activity Type	Always set this to Hedge for CounterParty Accounts.
Origin Code	For a counterparty account containing client positions select "Client", and for one containing house/proprietary positions select "House".
Collateral	Checked to false for a Child Account, since only positions will be managed at this level.
Parent	Mandatory field which references the Parent Account to which the account is associated. Restricted to Parents Accounts with the same LE and PO.
Parent Margin Group	References the Margin Group to which the account belongs. Restricted to Margin Groups defined on the selected Parent Account. This field is mandatory only if the Parent Account 'Child Grouping' setting is set to true.

# Section 7. Settlement Instructions Configuration

Settlement Instructions are required to route both internal and external transfers.

**Diagram 1** – SDI between the Client and PO for Internal Settlement (clearing activity from transactions, fees, clearing transfers) and margin calls (external SDI).



**Diagram 2** – SDI between the CounterParty (CCP or Clearer) and PO for Internal Settlement (clearing activity from transactions, fees, clearing transfers) and external settlements (margin calls...).



# 7.1 Client SDIs

#### **Client SDI for Internal Account Balances**

Settlement Instructions should be configured to settle internal flows to the Client Collateral Account when the LE role is "Client". We use the Method 'CLEARING' to match these SDI's to the PO SDI with the same Method.

🔀 Settlement [	Delivery Instructions [1	.44005/erste/]	
Utilities Help			
Edit Attributes	& Notes Browse		
SDI Id	6303		
Reference	6303	Cash/Security	BOTH
Role	Client 🔹	Contact	Default 👻
Beneficiary C	CLIENTA	Processing Org	US FCM 🗸
Benef. Na		Products	ANY
Ccy 🗸	ANY	SD Filter	
Pay/Rec [	зотн 🔻	Trade CounterParty	ALL
Description	Clearing/CLIENT A @ US F	CM	Preferred Priority 0
📃 Link SDI			
Method Cle	earing 💌	Add 📝 Direct	Effective From 03/17/2015
Identifier			Effective To
			by Trade Date
[agent] [inte	rmediary] [intermediary2	Direct	
DDA CLIEN	IT A @ US FCM		
New	Delete Save	Save As New	Reg. Xfer Close
Show Pendir	ng Authorization	uthorization	

Field Name	Purpose/Impact	
Reference	System populated with SDI Id.	
Cash/Security	Set to BOTH.	
Role	Role must be Client for Client Account SDI.	
Contact	Default.	
Beneficiary	The LE Short Name of the Client.	
Processing Org	The LE Short Name of the PO managing this account.	
Benef. Name	Optional field.	
Products Set to ANY.		

Field Name	Purpose/Impact
Ссу	Set to ANY.
SD Filter	Can be used to filter specific transfers, but main SDI will leave this field blank for simple account configuration. Note you need to define a specific CLEARING SDI for Role = Client and SD Filter using MarginCall Id for Product Type = Margin Call when the client has more than one clearing account to allow appropriate SDI selection for the Margin Call trade.
Pay/Rec	Set to BOTH.
Trade CounterParty	Set to ALL.
Preferred	Check this Box so that this is the first SDI attempted to be used.
Priority	Set to 0 so that this is the first SDI attempted to be used.
Method	Set to CLEARING. This Method must matche the same method on the matching PO SDI for internal flows.
Direct	Check this Box.
DDA	Enter the Client Standard or Parent Account. We will also refer to this account as the "Collateral Account" since it has the Collateral flag set to true.

For client internal transfers, the SDI selection is driven by the trade attribute ClientAccount set at the transaction level except for Margin Call which follows the standard SDI selection (this attribute is not propagated on Margin Call trade).

When the client has more than one clearing account (*ie.* more than one Deposit Collateral Contract) you will have to define, in addition to the standard Client SDI presented above, specific Client SDIs for the Role = Client and Product = Margin Call with SD Filter referring to the Margin Call Contract Id = Client Master and Children Contract Id. This will force the system to select the appropriate SDI for the Margin Call trade for the Role = Client. An example is presented below. No need to define this extra-SDI if the client has only one clearing account.

Settlement Delivery Instructions [144005/erste/]	- • ×
Utilities Help	
Edit Attributes & Notes Browse	
SDI Id 6304	
Reference 6304 Cash/Security BOTH	
Role Client   Contact Default	
Beneficiary CLIENTA Processing Org US FCM	
Benef. Na Products MarginCall	
Ccy ANY SD Filter VM Contract Client A	
Pay/Rec BOTH   Trade CounterParty ALL	
Description Clearing/CLIENT A @ US FCM	
Link SDI	
Method Clearing  Add  Direct Effective From 03/17/2015	
Identifier Effective To	
by Trade Date	
Lagent] [Intermediary] [Intermediary2] Direct	
DDA CLIENT A @ US FCM	
New         Delete         Save         Save As New         Reg. Xfer	Close
Show Pending Authorization	

SD Filter must list all margin call contracts for the Margin Call Trade, ie. Master and Children or Exposure Groups

🔀 Static Data Filter Window [1-	44005/erste/]				- • ×
Name: VM Contract Client A			Attribut	es	Simulate
Comment:				Pe	ending Modifs
Groups: ANY					
Attribute	Criteria		Filter Value(s)		
Margin Call Contract Id	TINT_ENUMERATION		5507,5508,5509,5510,5511		
Load New Delet	e Save Save as			Usage	e Close

#### **External Client SDI**

These are the settlement instructions for the actual settled payments between the client and FCM. This SDI is needed to reflect the cash management impact of the margin call (and potentially other cash adjustment flows) process between the FCM and its clients.

Z Settlement Delivery Instructions [144005/erste/]	
Utilities Help	
Edit Attributes & Notes Browse	
SDI Id 6028	
Reference 6028 Cash/Security BOTH	
Role CounterParty   Contact Default	
Beneficiary CLIENTA Processing Org ALL	
Benef. Na Products ANY	
Ccy ANY SD Filter	
Pay/Rec BOTH   Trade CounterParty ALL	
Description Swift/CITIBANK/666666    Priority  0	
Link SDI	
Method Swift	
Identifier Effective To	
by Trade Date	
Agent: CITIBANK [intermediary] [intermediary2] Direct	
Code CITIBANK	
Contact Default   GL A	
Name Sub A/C R-Ship	
Identifier	
New Delete Save As New Reg. Xfer	Close
Show Pending Authorization	

Field Name	Purpose/Impact
Reference	System populated with SDI Id.
Cash/Security	Set to BOTH.
Role	Role must be CounterParty for external settlements. This SDI will only be used when the Client is treated as a CounterParty on a transfer.
Contact	Default.
Beneficiary	The LE Short Name of the Client.
Processing Org	The LE Short Name of the PO managing this account or ALL. External SDI is usually not linked to a specific PO.
Benef. Name	Optional field.
Products	Set to ANY.
Ссу	Set to ANY.
SD Filter	Can be used to filter specific transfers, but main SDI will leave this field blank for simple account configuration.

Field Name	Purpose/Impact	
Pay/Rec	Set to BOTH.	
Trade CounterParty	Set to ALL.	
Preferred	Check this Box so that this is the first SDI attempted to be used.	
Priority	Set to 0 so that this is the first SDI attempted to be used.	
Method	Set to SWIFT. This Method could be set to any value, as long as it matches the same method on the matching PO SDI for external settlements.	
Direct	Leave this unchecked since this SDI will be used for external settlements.	
Code	The Agent used by the Client.	
A/C	Free text description of Client's Account.	
Contact	Set to the contact type that will be used to confirm settlement with Client.	

# 7.2 Counterparty SDIs

#### Counterparty Internal Settlement Instructions

Counterparty SDI's will route transfers to the "mirror view" of the clearing account of the PO. This will be achieved by defining an 'internal' or clearing SDI for the Role Counterparty with the PO/FCM and attach the Account with Role = CounterParty to that CounterParty SDI. An example is presented below.

The SDI selection for the Counterparty is standard. This means that as soon as you have several Clearing Accounts for a CCP or Broker you will have to enrich the CounterParty Clearing SDI with a SD Filter referring to the trade attribute CounterPartyAccount.

Settlement Delivery Instructions [144005/erste/]	- • ×
Utilities Help	
Edit Attributes & Notes Browse	
SDI Id 6009	
Reference 6009 Cash/Security BOTH	
Role CounterParty   Contact Default	
Beneficiary UBS CLEARING BROKER Processing Org US FCM	
Benef. Na Products ANY	
Ccy ANY SD Filter CtpyAccount=UBS CLIENT	
Pay/Rec BOTH   Trade CounterParty ALL	
Description Clearing/UBS CLIENT IV Preferred Priority 0	
Link SDI	
Method Clearing  Add  Direct Effective From 03/17/2015	
Identifier Effective To	
by trade bale	
Lagent] [Untermediany] [Untermediany2]] Direct	
DDA UBS CLIENT	
New Delete Save Save As New Reg. Xfer	Close
Show Pending Authorization	

#### SD Filter must refer to the Trade Attribute CounterpartyAccount

🛓 Static Data Filter Window [144005/erste/]	l				- • ×
Name: CtpyAccount=UBS CLIENT				Attributes	Simulate
Comment:					Pending Modifs
Groups: ANY					
Attribute	Criteria		Filter Value(s)		
CounterPartyAccount.Account Name	≠ IN	Add	UBS CLIENT		Remove
Load New Delete Save	Save as				Usage Close

Field Name	Purpose/Impact
Reference	System populated with SDI Id.
Cash/Security	Set to BOTH.
Role	Role must be <b>CounterParty</b> .

Field Name	Purpose/Impact
Contact	Default.
Beneficiary	The LE Short Name of the CounterParty.
Processing Org	The LE Short Name of the PO managing this account.
Benef. Name	Optional field.
Products	Set to ANY.
Ссу	Set to ANY.
SD Filter	When the Counterparty has only one account, you can leave this field blank.
	When the Counterparty has more than one clearing account, you will have to define a SDFilter referring to the trade attribute CounterPartyAccount in order to select that appropriate Internal/Clearing SDI. This SDI will apply for all trade types except Margin Call where the SDI selection will not use these trade attributes.
	Thus, as soon as the CounterParty has more than one clearing account, you will also need to define a specific CLEARING SDI for Role = CounterParty and SD Filter using Margin Call Contract Id for Product Type = Margin Call. This will allow selecting the appropriate SDI selection for the Margin Call trade.
Pay/Rec	Set to BOTH.
Trade CounterParty	Set to ALL.
Preferred	Check this Box so that this is the first SDI attempted to be used.
Priority	Set to 0 so that this is the first SDI attempted to be used.
Method	Set to CLEARING. This Method must match the same method on the matching PO SDI for internal flows.
Direct	Check this Box.
DDA	Enter the CounterParty account. We will also refer to this account as the "Collateral Account" since it has the Collateral flag set to true
Contact	Set to the contact type that will be used to confirm settlement with Client.

For counterparty "internal" transfers, the SDI selection remains standard but must be driven for most flows by the trade attribute CounterPartyAccount set at the transaction level (using SD Filter to refer to that attribute).

As we do not propagate the CounterPartyAccount on margin call trade, we also need – as soon as the PO has more than one Counterparty account – to define specific SDI for Margin Call referring to the proper contract id.

When the PO has more than one clearing counterparty account (*ie*. more than one Deposit Collateral Contract) you will have to define, in addition to the standard Counterparty SDI presented above, specific Counterparty SDIs for the Role CounterParty and Product = Margin Call with SD Filter referring to the Margin Call Contract Id = List of Master and Children contracts. This will force the system to select the appropriate SDI for the Margin Call trade for the Role = CounterParty. An example is presented below. No need to define these extra-SDI if the PO has only one CounterParty account with this CCP or Clearer.

🛃 Settlement De	Settlement Delivery Instructions [144005/erste/]								
Utilities Help									
Edit Attributes & Notes Browse									
SDI Id	6009								
Reference	6009	Cash/Security	BOTH						
Role Co	ounterParty 🔹	Contact	Default 🔹						
Beneficiary UB	3S CLEARING BROKER	Processing Org							
Benef. Na		Products	MarginCall						
Ccy AN	νγ	SD Filter	VM Contract UBS Client						
Pay/Rec BC	тн 🔻	Trade CounterParty	ALL						
Description Cle	earing/UBS CLIENT		✓ Preferred Priority						
Link SDI									
Method Clear	ring 🔻	Add 📝 Direct	Effective From 03/17/2015						
Identifier			Effective To						
			by Trade Date						
[agent] [intermediary] [intermediary2] Direct									
DDA UBS CLIENT									
New Delete Save As New Reg, Xfer Close									
Show Pending Authorization									

🔀 Static Data Filter Window [144005/erste/]									
Name: VM Contract UBS Client	Attributes	Simulate							
Comment:		Pending Modifs							
Groups: ANY									
Attribute	Criteria		Filter Value(s)						
Margin Call Contract Id	* INT_ENUMERATION		5501,5502,5503	,5504,5505					
Load New Delete	Save Save as				Usage Close				

#### **Counterparty External Settlement Instructions**

These SDI are used to generate the external transfers for the settlements to the CCP or Clearer. Note the Role must be set to **Clearer** to link to the Orderer Role of our Margin Call contract. 72
Settlement Delivery Instructions [144005/erste/]				
Utilities Help				
Edit Attributes & Notes Browse				
SDI Id 6013	]			
Reference 5013	Cash/Security BOTH 🔹			
Role Clearer 🗸 🗸	Contact Default 🗸 🗸			
Beneficiary UBS CLEARING BROKER	Processing Org ALL			
Benef. Na	Products ANY	]		
Ccy USD	SD Filter	]		
Pay/Rec BOTH 🗸	Trade CounterParty ALL	]		
Description Swift/CITIBANK/987654	✓ Preferred Priority 0			
Link SDI				
Method Swift 🔹	Add Direct Effective From	]		
Identifier	Effective To			
	by Trade Date			
Agent: CITIBANK [intermediary] [inte	ermediary2] Direct			
Code CITIBANK	A/C 987654	sg		
Contact Default 🗸	GL A			
Name	Sub A/C R-Ship			
Identifier				
New Delete Save	Save As New Reg. Xfer	Close		
Show Pending Authorization	Authorization			

# 7.3 Processing Org SDIs

### **PO Internal Settlement Instructions**

The PO internal SDI is a technical SDI used to match on one side the Client transfer that will be created with GL Account = Client Account and, on the other side, the CounterParty transfer that will be created with GL Account = CounterParty Account. The same unique PO SDI with Method = Clearing will be used to match both sides and create the expected internal transfers.

🛃 Settlement	Delivery Instructions [1	44005/erste/]			
Utilities Hel	p				
Edit Attribute	s & Notes Browse				
SDI Id	6015				
Reference	6015	Cash,	/Security	BOTH	•
Role	ProcessingOrg 🔹		Contact	Default	•
Beneficiary	US FCM	Proces	sing Org	ALL	•
Benef. Na			Products	ANY	
Ссу	ANY		SD Filter		
Pay/Rec	вотн	Trade Cour	iterParty	ALL	
Description	Clearing/DUMMY AGENT			✓ Preferred Priority	0
📃 Link SDI					
Method C	ilearing 🗸 🗸	bbA		Effective From	
t de unité en				Effective To	
Identifier				🔲 by Trade Date	
Agent: DUM	MY AGENT [intermediary]	[intermediary2]	Direct		
Code DUMM	Y AGENT				🔽 Msa
Contact	Default 🗸		,		
Name					R-Shin
Idontifier	· · · · · · · · · · · · · · · · · · ·				
New	Delete Save	Save As Ne	ew	Reg. Xfer	Close
Show Pend	ling Authorization	uthorization			

Note the GL Account set on the Clearing Processing Org. SDI must be created as a SETTLE Account with Ccy = ANY and Subtype = blank. See below:

🔀 Accounts Defini	tion - Authorization mode OFF ERSTE FINAL DUMMY / 6014 - version 1			• ×
Account Utilities	Reports Process Help			
Account Statements	Attributes Interests Limits Consolidation Translation/Revaluation Clearing Brows	e		
Account Name	DUMMY Call Account			
Processing Org	US FCM   Ccy ANY  Id 6014			
Туре	SETTLE  SubType  Auto/Template Acc	X		
External Name	Interface Rule Aggregate	Кеу	Value	<u></u>
		AccountStructure	-	
Description		AccountType	-	=
Legal Entity (F2)	DUMMY AGENT Role Agent	AssignmentMethod	Ŧ	_
		CATradeDDAInternal	Ŧ	
Creation Date	17/17 10:52:14 AM	CFTCAccountNumber		
Closing Account	Last Closing Data	CFTCNetGrossReportingFlag	Ŧ	
		CFTCSubAccount		
Parent Account	Parent Id 0	ClearingCashAccount		*
Status <ul> <li>Retroactivity</li> <li>Interest Bearing</li> <li>Active To</li> <li>Billing</li> </ul>				
New Delete	Save SaveAsNew CustomerTransfer			Close

### **PO External Settlement Instructions**

For external settlement to CCP or Clearer, we need to define standard Processing Org. SDI with the cash account credited/debited on the PO side. This allows managing the cash impact of all external movements. An example is presented below.

🔀 Settlement Delivery Instructions [144005/erste/]					
Utilities Help					
Edit Attributes	s & Notes Browse				
SDI Id	6017				
Reference	6017		Cash/Securit	у вотн	•
Role	ProcessingOrg 🔹		Contac	t Default	•
Beneficiary	US FCM		Processing On	g ALL	•
Benef. Na			Product	s ANY	
Ссу	EUR		SD Filte	r	
Pay/Rec	вотн 🔻	Tra	ade CounterPart	/ ALL	
Description	Swift/BARCLAYS BANK/333	333		✓ Preferred Priority	0
📃 Link SDI					
Method S	wift 🔹	Add	Γ	Effective From	
Identifier				Effective To	
Identifier				🔲 by Trade Date	
Agent: BARC	LAYS BANK [intermediary]	] [interm	nediary2] Direc	t	
Code BARCL	AYS BANK	A/C	333333		🔽 Msg
Contact	Default 🔹	GL A	@BARCLAYS		
Name		Sub A/C			R-Ship
Identifier					
New         Delete         Save         Save As New         Reg. Xfer         Close					
Show Pend	Show Pending Authorization				

# Section 8. Importing and Capturing Trades

Out-of-the-box, the trades can be imported in real-time from ATEO's LISA.

The counterparty of the trades is the clearing house or the clearing broker.

The trades navigate the Calypso workflow based on their clearing status, using straight-through processing and exceptions monitoring. Once the trades are cleared, they are liquidated as applicable and update the accounts positions.

Please refer to the Calypso ATEO LISA Integration Guide for complete details.

The trades can also be imported from other sources or they can be manually entered using the Listed Derivatives Trade windows or using the Pricing Sheet.

### 8.1 Trade Workflow

Processing Org = ALL

#### Product Type = G.ETD

The workflow presented below is an example to outline the control on fees. This is for information only. Additional controls will have to be put in place when using the automatic feed from LISA, G-API or a Broker File. This workflow does not include Undo Action (to undo exercise, etc.) and will need to be enriched.

Orig Status	Action	Resulting Status	STP	Rules	Task	SDF	Pref
EXECUTIONONLY	AMEND	EXECUTIONONLY	false	AutomaticFees CheckSDI	false		true
EXECUTIONONLY	CANCEL	CANCELED	false		false		false
NONE	NEW	PENDING	false		false		false
PENDING	EXECUTE	EXECUTIONONLY	true	CheckSDI Automatic Fees	false	ExecutionOnly	false
PENDING	AUTHORIZE	ZERO_COMM	true	CheckSDI Automatic Fees	false	NotExecutionOnly	false
PENDING	CANCEL	CANCELED	false		false		false
PENDING	AMEND	PENDING	false		false		false
PENDING	UPDATE	PENDING	true		false		true
ZERO_COMM	EXECUTE	VERIFIED	true	ETDCheckFee	false		true
ZERO_COMM	BYPASS_FEES	VERIFIED	false		false		true
ZERO_COMM	AMEND	PENDING	false		false		true
ZERO_COMM	UPDATE	PENDING	false		false		true
VERIFIED	AMEND	PENDING	false	AutomaticFees	false		true
VERIFIED	CANCEL	CANCELED	false		false		false
VERIFIED	UPDATE	PENDING	false		false		false

Static Data Filter "ExecutionOnly". Not ExecutionOnly is the opposite filter. Please note your will have to filter the EXECUTIONONLY status from the Liquidation and Transfer Engine using the engine parameters.

Static Data Filter Window [144003/CLEARING_40/]			
Name: ExecutionOnly		Attributes	. Simula
Comment:			Pending
Groups: ANY		]	
Attribute	Criteria		Filter Value(s)
KEYWORD.ClientAccount.AccountProperty.ExecutionOnly	⊤ IN	Add	true

# 8.2 Sample Trades

In the Pricing Sheet, you need to set the following in the User Preferences:

🟒 Config	gure				
Defaults	efaults Pricer Measures Events Toolbar Display Open Trades				
Name Value					
🗄 Gener	ral defaults				
Pricin	g				
🗄 Risk A	Analysis				
Misc					
Sales	Behavior				
Option expiry					
XVA					
⊞ IM					
Advanced					
Use Di	spatcher				
Allocat	Allocated Trade Loading Style Report Style				
Always use Bulk Termination Window True					
Show PricingScript Script Tab False					
Default Listed Product Strategy Generic					
Cowbell					

### **Default Listed Product Strategy = Generic**

To capture trades, you need to use the strategies Future (for Future trades) or Option (for Future Option and ETO trades).

Find Property	1
Strategy Name	Future
Price	Price
Save	Save
Solve	Don't Solve
Trade Id	7704
Trade Date	09/03/2015
Trade Time	9:57:45 AM
Book	US FCM Client Clearing
Status	VERIFIED
Action	AMEND
Client Account	EUROCORP-ACC-ST0001 (38
Counterparty Account	CME Client Omnibus Account
Counterparty	CME CLEARING GROUP
Exchange	CBOT
🛃 Contract	CBOT1
Contract Date	Sep 15
🛃 Settle Type	Physical
Settle Ccy	USD
Expiry Date	09/14/2015
Buy/Sell	Buy
Quantity	1
🔁 Price	200.0000
Price Format	PriceC
動 Market Price	0.0000

Name	Value
BusinessFlow	FCM
ССР	✓ CME CLEARING GROUP
CCPClearedDatetime	2015-09-03T11:57:45.000-05:00
CCPOriginCode	▼ CLIENT
CCPStatus	Cleared
CCPTradeID	100003
Client	▼ EUROCORP
ClientAccount	EUROCORP-ACC-ST0001 (3804)
ContractSymbol	с
CounterPartyAccount	<ul> <li>CME Client Omnibus Account (3743)</li> </ul>
ExecutingBroker	▼ US FCM
ExecutionType	Allocation, Execution
ExecutionTypeCode	3
FutOpt	FUT
NegotiatedCurrency	USD
OrderId	9517
OrderQuantity	0
PSStrategyName	Future
RateSide	Choice
RelatedProductType	ETD
SecondaryTradeType	1
SecondaryTradeTypeCode	1
Service	ATEO
ServiceLevel	▼ Full Service
TradeSource	ATEO

Strategy Name	Option
Price	Price
Save	Save
Solve	Don't Solve
Trade Id	7601
Trade Date	09/02/2015
Trade Time	11:35:29 AM
Book	US FCM Client Clearing
Status	VERIFIED
Action	AMEND
Client Account	EUROCORP-ACC-ST0001 (
Counterparty Account	EUREX A1 (3677)
Counterparty	EUREX CLEARING
Exchange	EUREX
🛃 Contract	EUREX5040
Contract Date	Sep 15
🛃 Settle Type	Physical
Settle Ccy	EUR
Expiry Date	09/18/2015
🗄 Strike	1
Put/Call	Call
Buy/Sell	Buy
Ouantity	5

Name	Value
CabinetType	▼ Fixed
CCP	EUREX CLEARING
CCPOriginCode	✓ CLIENT
CCPStatus	Cleared
Client	▼ EUROCORP
ClientAccount	▼ EUROCORP-ACC-ST0001
ContractSymbol	5ABL
CounterPartyAccount	<ul> <li>EUREX A1 (3677)</li> </ul>
FutOpt	OPT
PSStrategyName	Option
RateSide	Choice
RegCode	04 - Non regulated
RelatedProductType	ETD
ServiceLevel	▼ Full Service
TradeSource	Manually Entered

# 8.3 Inventory Position

The concept of cash inventory "buckets" has been implemented to help classify activity in a given account by its source. This is used in our clearing solution to allow us to separate account balances and movements into business categories. The bucketing logic is triggered based on the transfer type of the transfer hitting the account and is designed to work either as a hardcoded rule or based on the users' determination of the bucket to be used for manually defined fees and commissions.

Bucket Name	Logic Description							
Fees	Any manually defined fee which is designated as belonging to the "Fees" bucket in the Fee Definition							
	General Properties							
	Type: EXCHANGE FEE   Role: Client   PnL Category: MTM   Include: Pricing   Comments: Exchange Fee - Counterparty							
	Free Offset:       0       Cal         Products:       ALL          Default Calculator:       FeeGrid          Preferences:       V Accounting       Allocation         V Transfer       Settlement Amount       Margin:							
Commissions	Any manually defined fee which is designated as belonging to the "Commissions" bucket in the Fee Definition							
Futures PL	Transfers of type REALIZED_PL							
Option Premium	Transfers of type PREMIUM							
Option Cash Settlement	Transfers of type EXERCISE_FEE and OPT_CASH_ADJ							
Variation Margin	Transfers of type NPV and NPV_REV							
NOV	Transfers of type NOV and NOV_REV							
OTE	Transfers of type OTE and OTE_REV							
Discounted OTE	Transfers of type DISC_FWD_OTE and DISC_FWD_OTE_REV							
Cash Movements	Any transfer which doesn't fall into one of the buckets in the list above.							

The same buckets are used as the basis of the Financial Summary of the Client Statement, based on a position date of "Settle (Frozen)" which uses the later of the Settle Date and the Booking Date of the transfer as the date on which it impacts the bucket.

Using the Movement Type field in the criteria panel of the Inventory Position report, you can select any of the buckets as a movement (daily change) and/or balance (cumulative total) to be displayed in the report.

InventoryPosition / Evane Client Cash Balances	
	-
Report Data View Export Market Data Process Utilities Help	
Criteria Financing	
Criteria	
Start 04/07/2016 •	End 04/08/2016     Use Ten
Class Type Date Bo	ooks
Client Actual Settle (Frozen) Aggregation Book/Agent/Account - Cu	urrencies
Client Actual Settle (Frozen)	
Counterparty	
Account Id 4221,4223,4225,4302,4.	Agg. Co
Position Value Quantity  Custom Filter	Disol
Position Direction All   Offset, Pos Cash/sec Cash   Mit	lovement Type TE,Balance NOV,Balance Filter
Closing Bal. No	ode Expansion Level
Cash Movement Types	
Available Selected	Currency: EUR
	EUR
	EUR
Available Balance	FIR
Balance Calateral Lisable E Commissions	EUR
Balance Commissions Movements Ontion Premium	EUR
Balance Fees  Movements Option Cash Settlement	EUR
Balance Futures PL Movements Cash Movements	EUR
Balance Margin Call 🚯 Balance OTE	EUR
Balance Margin Call Book Owner Balance Discounted OTE	EUR
Balance Margin Call Book Owner In Balance NOV	Currency: USD
Balance Margin Call Book Owner Out Balance	USD
Balance Margin Call In 🚽	USD
	USD
	USD
OK Cancel	USD
	Pricing Details: Cu

The user can also go to the Process menu of the Cash Inventory Report and create new balance or movement types using formulas based on available buckets. Once the balance or movement is created and the formula defined, it will be available for use in the report.

Composite Cash Position Definition : Cash Balance	Garage	ar1.84	×
Variables	Conditions		1
Basic Positions	If: Then:	Else:	Insert
Balance Cash Movements	Functions		
Balance_Collateral_Usable	- (	)	Insert
Balance_Commissions	Operators		
Balance_Discounted_OTE			
Balance_Fees	▼		Insert
Balance_Futures_PL	Formula		
Balance_Margin_Call			
Balance_Margin_Call_Book_Owner	Balance_Cash_Movements+Balance_Commissions+Balance_Com	nmissions+Balance_Fees+Balance_Futures_Pl	+Balance_
Balance_Margin_Call_Book_Owner_In	Option_Cash_Settlement+Balance_Option_Premium		
Balance_Margin_Call_Book_Owner_Out			
Balance_Margin_Call_In			
Balance_Margin_Call_Non_Rehypothecable 👻			
Insert			
	Position Value : Templat	e Position Value   Check Apply	Cancel

# Section 9. Importing Market Data

The scheduled task SIMPLE\_DATA\_IMPORT is used to import end of day settle prices (for variation margin calculation) and FX quotes.

Scheduled T				_												
Scheduled T Use the dial	F <b>ask D</b> o log belov	e <b>fin</b> i / to c	i <b>tion</b> Jefine tl	he attri	butes fo	or the	e task to b	e execu	uted.	These a	ttributes	s will c	ontrol	the l	behavio	or of the
of attribute Trigger Defi	s, gener inition di	al att alog	ributes	which a	are the	same	e across a	ll tasks a	and ta	sk speci	fic attrib	utes.	Scheo	Juling	of the	task is p
Task Description																
Task T	Type:	SIMP	LE_DAT	A_IMP	ORT											
External Refere	ence:	Settle	ement P	Price Imp	port											
Comm	ents:	Depe	nds on	market	data fil	les st	ored local	ly								
Descrip	otion:	Settle	ement P	Price Im	port											
Execution Parame	eters															
Attempts:	1		Retry	After:	0		minutes	Expec	ted E	xecution	Time (S	LA):	2		minute	s
JVM Settings:	-Xms51	2m -)	(mx 102	4m -XX:	:MaxPe	rmSiz	e=256m									
Log Settings:																
Task Notification	Options															
Task Notification	Options	Pub	lish Busi	siness E	vents	То	User:			•						
Task Notification	Options Is	Pub	lish Busi	siness E	vents	То	User:			•						
Task Notification	Options Is	) Pub	lish Bus	siness E	vents	То	User:			•						
Task Notification	Options Is E tributes	] Pub	lish Bus	siness E <sup>1</sup>	vents	То	User:			•						
Task Notification Send Email Common Att Task ID Processing Org Trade Filter Filter Set	Options Is E	] Pub	lish Bus	iness E	vents	То	User:			•						
Task Notification Send Email Common Att Task ID Processing Org Trade Filter Filter Set Pricing Environ	Options ls tributes	] Pub	lish Bus	siness E	vents	То	User:			▼ 6501 default						
Task Notification Send Email Common Att Task ID Processing Org Trade Filter Filter Set Pricing Environ Timezone	Options ls tributes g	] Pub	lish Bus	siness E	vents	То	User:			▼ 6501 default Europe,	Paris					
Task Notification Send Email Common Att Task ID Processing Org Trade Filter Filter Set Pricing Environ Timezone Valuation Time	Options ls tributes g ment : Hour	Pub	lish Bus	iiness E	vents	To	User:			<ul> <li>▼</li> <li>6501</li> <li>default</li> <li>Europe,</li> <li>22</li> </ul>	Paris					
Task Notification ( Send Email Common Att Task ID Processing Org Trade Filter Filter Set Pricing Environ Timezone Valuation Time Valuation Time	Options Is tributes g ment : Hour : Minute	Pub;	lish Bus	iness E	vents	То	User:			<ul> <li>6501</li> <li>default</li> <li>Europe,</li> <li>22</li> <li>0</li> </ul>	Paris					
Task Notification ( Send Email Common Att Task ID Processing Org Trade Filter Filter Set Pricing Environ Timezone Valuation Time Undo Time Hou	Options ls tributes g ment Hour Minute ur	Pub	lish Bus	iness E	vents	То	User:			▼ 6501 default Europe, 22 0	Paris					
Task Notification ( Send Email Common Att Task ID Processing Org Trade Filter Filter Set Pricing Environ Timezone Valuation Time Valuation Time Undo Time Min	Options ls tributes g ment Hour Minute ur	Pub	lish Bus	siness E	vents	То	User:			▼ 6501 default Europe, 22 0	Paris					
Task Notification ( Send Email Common Att Task ID Processing Org Trade Filter Filter Set Pricing Environ Timezone Valuation Time Valuation Time Undo Time Hou Undo Time Min Valuation Date	Options ls tributes g ment Hour Minute ur ute offset	Pub	lish Bus	iness E	vents	То	User:			▼ 6501 default Europe, 22 0	Paris					
Task Notification ( Send Email Common Att Task ID Processing Org Trade Filter Filter Set Pricing Environ Timezone Valuation Time Undo Time Hou Undo Time Min Valuation Date From Days	Options ls tributes g ment Hour Hour Minute ur ute Offset	Pub;	lish Bus	iness E	vents	То	User:			▼ 6501 default Europe, 22 0	Paris					
Task Notification ( Send Email Common Att Task ID Processing Org Trade Filter Filter Set Pricing Environ Timezone Valuation Time Undo Time Hou Undo Time Min Valuation Date From Days To Days	Options ls tributes g ment Hour Minute ur nute Offset	Pub	lish Bus	iness E	vents	То	User:			<ul> <li>▼</li> <li>6501</li> <li>default</li> <li>Europe,</li> <li>22</li> <li>0</li> </ul>	Paris					
Task Notification of Send Email Common Att Task ID Processing Org Trade Filter Filter Set Pricing Environ Timezone Valuation Time Valuation Time Undo Time Hou Undo Time Min Valuation Date From Days To Days Pricer Measure Business Holidi	Options ls tributes g ment Hour Hour Minute coffset es avs	Pub;	lish Bus	siness E	vents	To	User:			▼ 6501 default Europe, 22 0	Paris					
Task Notification of Send Email Common Att Task ID Processing Org Trade Filter Filter Set Pricing Environ Timezone Valuation Time Undo Time Hou Undo Time Hou Undo Time Min Valuation Date From Days To Days Pricer Measure Business Holida	Options ls tributes g ment Hour Hour Minute ur ute Offset es ays tes	Pub;	lish Bus	iness E	vents	To	User:			▼ 6501 default Europe, 22 0	Paris					
Task Notification ( Send Email Send Email Common Att Task ID Processing Org Trade Filter Filter Set Pricing Environ Timezone Valuation Time Undo Time Hou Undo Time Min Valuation Date From Days To Days Pricer Measure Business Holida	Options ls tributes g ment Hour Hour Ninute ur Ute Offset es ays ites	Pub;	lish Bus	iness E	vents	To	User:			<ul> <li>control control c</li></ul>	Paris	Impor	rt.xml			
Task Notification ( Send Email Common Att Task ID Processing Org Trade Filter Filter Set Pricing Environ Timezone Valuation Time Undo Time Hou Undo Time Min Valuation Date From Days To Days Pricer Measure Business Holida Task Attribu Resource Endpoint	Options ls tributes g ment Hour Minute ur uute Offset es ays ites	Pub	lish Bus	siness E	vents	To	User:			Contemporation Conte	Paris	Impor	rt.xml			

Attribute Name	Purpose/Impact
Task Type	SIMPLE_DATA_IMPORT
Processing Org	The name of the Clearing Broker running the EOD process.
Pricing Environment	The name of the PE from which to source the Closing Prices.
Timezone	The Time Zone in which the Clearing Broker operates.

The market data import process uses the same files as the risk calculation, and relies on the folder structure described in Section 3.1 of this document.

# Section 10. Variation Margin Calculation

### 10.1 Overview

The Variation Margin is defined as the change in valuation of a portfolio due to new trade activity, lifecycle events, and the daily changes in the settlement prices of futures and options across all exchanges in their settlement currencies. In market terminology, a portfolio's Open Trade Equity (OTE) represents the current valuation of all open positions based on their traded price and the most recent market closing price in each of the individual instruments. In addition, options are commonly valued using Net Option Value (NOV) which represents the options current value, long or short, based on closing prices but ignoring the initial traded price.

Realized gains or losses due to closing out of open positions, payment of option premium, fees, commissions and cash or physical settlement of future and option positions also contributes to the daily variation margin calculation, impacting the cash balance of the account.

The sum of OTE, NOV and Realized Cash at the end of each day results in that account's closing Cash Net Liquidating Value (NLV), with securities deposited as collateral making up the rest of the account's Total NLV.

The execution of the scheduled task CLEARING\_VM\_CALC will generate the daily OTE and NOV, and present it in a way that the account balances are updated only with the day-to-day change in the account value.

### Account Setting - Margin Mode

The PO must configure all client and counterparty collateral accounts to use one of two available VM Margin Modes – "OTE" or "Realized VM" - in order to specify how the unrealized profit or loss of their open positions behave.

• **OTE Mode** treats unrealized PL as a credit or debit to the account balance which can be used to cover Initial Margin Requirements, but cannot be withdrawn from the account as cash. In other words, if an account accumulates a large positive OTE without ever realizing the profit by closing out the position, "OTE" margin mode would not make that amount available in the cash balance to transfer back to the client, however it would allow that amount to be used to cover the Initial Margin Requirements, likely eliminating the need for the client to post additional collateral.

Margining		
🛷 Collatera	I	
Margin Mode:	OTE 👻	
Deposit:	Client CL7 Assets(13802)	
Liability:	Client CL7 Margin Requirements(13803)	

We model OTE Mode by calculating the VM in the standard way, creating a Clearing Transfer trade with OTE and NOV amounts, but we also generate a VM Collateral Exposure which captures the OTE amount as a pricer measure. The Collateral Exposure trade gets associated to the account's Liability Contract, and the negative or positive OTE amount is summed up with the true IM Requirements, increasing or decreasing them respectively. In OTE mode, the OTE and OTE\_REV transfers from the Clearing Transfer trade do not get linked to the account's Deposit (VM) Collateral Contract, so while they do appear in the account's inventory balance, they are not consider assets by the Margin Call calculation process that could be used to cover margin shortfalls or withdrawn as cash. Since they offset IMR in the Liability Contract, we do not want to double count them.

• **Realized PL Mode** treats unrealized PL the same as realized, and is essentially the equivalent of closing out all open positions each night at the settlement price, and reopening them the next day as a new position at the previous day's price. The unrealized can be used as a cash equivalent to cover IMR or to withdraw if the account is in excess.

This mode is triggered by selecting 'Realized VM' as the margin mode on the collateral account, and works by generating NPV and NPV\_REV transfers on the Clearing Transfer trade that get updated with the account's associated VM Collateral Contract, and therefore treated as cash assets.

The behavior of the OTE or NPV is driven in part by the Fee definition. The highlighted 'Margin' field is set to "Account Level" in the standard system configuration, meaning that based on the setting of the Margin Mode on each account, the fee transfer may or may not get tagged with the MarginCall XferAttribute that is required for it to be considered as an asset in the Deposit contract.

🔀 Fee Definiti	ion		_								
General								P	roperties		
	Type:	OTE							Key		Value
	Role:	CounterPa	arty		-				inc.y		vulue
Fee	Ofset:	0	Bus								
Pro	ducts:	ALL									
Default Calc	ulator:	NONE			-						
In	dude:	V Pricing	Acc	ounting		ocation			ETD		
		V Transf	fer 📄 Set	tlement Amount					Inventory Bucket:	OTE 👻	1
		Open Tra	de Equity						Duplicate Transfer		1
Comr	ments:								Margin		Margin
									- Margarite		1 nurgin
Fee Type 🕖		Pricing	Transfer	Role	Accou	nting	Settle Am	ount	Comments		
OTE OTE REV		<b>V</b>	<b>V</b>	CounterParty CounterParty		7			Open Trade Equity Open Trade Equity Reversal		
General		+ =	+ =	1 .		ropertie	s		+		
						Kau				Vehie	
Type:	NPV					Ney				Value	
Role:	Counter	Party		•							
PnL Category:											
Include:	V Prici	ng									
Commente:	VM calcu	lation when	account set to	Realized VM							
connerto.	•			•							
T											
Trade tee parameters	s										
Fee Offset:	0	Cal				ETD					
Products:	ALL										
Default Calculator:	NONE			-			Inventory I	sucket:	variation Margin 👻		
Preferences:	Acco	ounting	Allocation			~	Duplicate Tr	ansfer			
	🔽 Tran	isfer 📃	Settlement Am	ount				Margin:	Account Level 👻 Margin Categ	ory: VM	

#### Account Setting – Family Accounts

Variation Margin is calculated on open positions at the level of each account that is eligible to hold positions – what we refer to as Standard Accounts and Child Accounts. When an account is a child, the OTE/NPV and NOV transfers generated at the child account level are duplicated to the parent account so that both accounts are equally impacted. This holds true for other transfer types as well, such as Premium, Realized PL and Option Cash Settlement. What this means is that for a parent child structure, the total VM at the parent level is the sum of all flows across all child accounts.

#### **Settle Prices**

To calculate the Variation Margin, the system requires that each instrument in the portfolio has a closing price saved under the CLOSE instance on the process date.

# 10.2 Scheduled Task CLEARING\_VM\_CALC

Task Desc	iption				
	Task Type:	CLEARING_VM	1_CALC		
External	Reference:	1a EOD VM Cal	culation for All	Accounts at	US FCM
	Comments:	1a EOD VM Ca	culation for All	Accounts at	US FCM
[	Description:	1a EOD VM Cal	culation for All	Accounts at	US FCM
Execution F	Parameters				
Atten	npts: 1	Retry Al	fter: 0	minutes	Expected Execution
JVM Sett	ings: -Xms5	12m -Xm×1024n	n -XX:MaxPerms	5ize=256m	
Log Sett	ings:				
⊥ ⊤Task Notifi	cation Options				
🗖 Send	l Emails	Publish Busine	ess Events 1	To User:	<b>•</b>
E Commo	n Attribut	25			
🖃 Task Al	tributes				
CCP/Cle	aringHouse		ALL		
Clearing	Service		ETD		
Select P	ositions By		Client Account		
Account	s		ALL		

Attribute Name	Purpose/Impact
Task Type	CLEARING_VM_CALC
Processing Org	The name of the Clearing Broker running the EOD process.
Pricing Environment	The name of the PE from which to source the Closing Prices.
Timezone	The Time Zone in which the Clearing Broker operates.
Valuation Time Hour/Minute	The Valuation Time of the scheduled task can be set to ensure that each time the task is run, it is run at the same Valuation Time regardless of the Execution Time. The ST should be run at a time in the specified Time Zone which is before the Book EOD time of all Books which hold positions for the accounts included in the run. If the scheduled task valuation time is after the Book EOD time on date 'T', the task will be run as if it is running for EOD on T+1.
CCP/ClearingHouse	This field indicates the list of markets to process. Allows the user to select a list from any Legal Entity with Role 'CounterParty', or to simply select 'ALL' to process all markets.
Clearing Service	Always set to ETD for Listed Market processing. This uses the 'RelatedProductType' attribute of the trade to locate trades and positions related to ETD processing.
Select Positions By	Allows the user to determine the Account Types that they may want to filter on in the next field.

Attribute Name	Purpose/Impact
Accounts	Allows the user to select from a list of Standard and Child Accounts of the type selected in the previous field. Can be used to isolate specific accounts for processing, or can be set to 'ALL' to process all accounts.

# 10.2.1 Clearing Transfer Trades

The VM flows generated through the task are stored on a Calypso product called a Clearing Transfer trade. Storing these calculated amounts on a trade allows us to leverage the robust support for trade workflow, transfer generation, settlement routing and reporting that is supported across all Calypso products. We simply use the Clearing Transfer product as a convenient container for the VM transfers.

Once the trade level valuations are complete, the results will be consolidated into a single OTE/NPV and a single NOV amount for each unique combination of CCP, Clearing Service, Client Account, Counterparty Account and Currency. Clearing Transfer Trades will then be formed to contain these flows and generate BO transfers. The current design removes the existing design of CT trade mirroring, and instead generates a single CT trade with fees and transfers facing both the client and counterparty.

🔀 Clearing	gTransfer(CA	SH_SETTLEM	ENT/-18,319.	.23 USD) -P	O is US FCN	M (12882) - V	/ersion : 0 N	Mod User :(null	) [144000/	′s 😐	
Trade B	ack Office	ClearingTran	sfer Analyt	tics Pricin	g Env Mai	rket Data U	tilities He	lp			
Trade D	etails Fees										
Cou 0	ME GROUP		. CounterPa	rty Book	US FCM Clie	nt Clearing	▼ s	tatus VERIFIED	I	D 🔻	12882
PO L	IS FCM		. Processing	Org				Mirr	or id 0		
Client B	LEE CAP		. Client	Trade	e Date 07/	15/2015	6:00:00 PM	Settle Da	te 07/15/2	2015	
Receive	Principal	18,319.23	Ccy	) ▼ Tra	ansfer Type	CASH_SETTL	EMENT	✓ Account	CME Client	Omnibus	
Туре	Date	Start Date	End Date	Currency	Amount	Legal Entity	Pay/Rec	Known Date	Method	Input	External Id
OTE_REV	07/15/2015	07/15/2015	07/15/2015	USD	0.00	CME GROUP	REC	07/15/2015		0	( C
NOV	07/15/2015	07/15/2015	07/15/2015	USD	5.00	CME GROUP	REC	07/15/2015		0	C
NOV_REV	07/15/2015	07/15/2015	07/15/2015	USD	0.00	CME GROUP	REC	07/15/2015		0	C
OTE	07/15/2015	07/15/2015	07/15/2015	USD	18,314.23	CME GROUP	REC	07/15/2015		0	C
•											4

The Clearing Transfer trade is created with the following logic:

Trade Element	Population Logic
Counterparty	The LE on the Counterparty Account associated to the trade.
Role	Hardcoded to Counterparty.
PO	The PO specified in the executed Scheduled Task.
Book	The default Client or House Clearing Book specified on the PO, based on the Origin of the Account to which the Margin Group is associated.
Trade Date	The Process Date of the Scheduled Task.
Settle Date	The Process Date of the Scheduled Task. Our Inventory balances will be built using Settle Date logic, and we need the CT trades generated on the processing date to impact the balances for that date.

Trade Element	Population Logic
Currency	The Currency of the CT trade will be taken from the currency of the aggregated transaction valuations.
Principal	The sum of the amounts of all of the counterparty flows included in the trade. We do not include all flows, because by definition these would always sum to zero.
Pay/Rec	This should be set based upon the sign of the Principal flow. A positive principal results in a setting of Receive and a negative principal amount results in a setting of Pay
Transfer Type	Hard coded to 'CASH_SETTLEMENT'
Client Account	The Client Account on the aggregated transaction valuations.
Counterparty Account	The Counterparty Account on the aggregated transaction valuations.
Trade Keywords	<b>CCP</b> - Taken from the CCP keyword of the trades whose valuation is contributing to the CT Trade. This is included because of the users' ability to run the task for a subset of all CCPs. If we did not uniquely identify the CT trade by CCP, the execution of the ST for one CCP would overwrite the flows for another previously executed CCP, and our finalization process would fail.
	<b>CCPOriginCode</b> - The Origin of the Client Account specified – House or Client.
	RelatedProductType - ETD.

### **OTE Cashflow**

For Accounts in MarginMode = OTE, generate an OTE flow as follows.

For the selected trade, if the product is a Future, or an Option with the PremiumPaymentConvention attribute = 'VariationMargined':

- Flow type = "OTE"
- SettleCurrency = The settle currency defined on the product
- Flow Amount = Sum of {Round(Market Price \* Tick Size \* Tick Value) Round(Traded Price \* Tick Size \* Tick Value)}\*
   Quantity} for the open quantity of each transaction that comprises the open position, where the sign of the Quantity
   follows these rules

If the product is an option with the PremiumPaymentConvention attribute not equal to 'VariationMargined':

- Flow type = "OTE"
- SettleCurrency = The settle currency defined on the product
- Amount = 0

#### **OTE\_REV** Cashflow

For accounts in Margin Mode of OTE or Realized VM, generate as follows:

Will be equal but opposite direction to the OTE amount on the previous day's CT trade with the equivalent trade attributes. If no CT trade is found, the amount will equal 0.

The previous day is the preceding business day subject to the holiday calendar designated on the PO under the ClearingBusinessCalendar attribute.

#### **NPV Cashflow**

For Accounts in MarginMode = Realized VM, generate an NPV flow as follows.

For the selected trade, if the product is a Future, or an Option with the PremiumPaymentConvention attribute = 'VariationMargined':

- Flow type = "NPV"
- SettleCurrency = The settle currency defined on the product
- Flow Amount = Sum of {Round(*Market Price* \* *Tick Size* \* *Tick Value*) *Round(Traded Price* \* *Tick Size* \* *Tick Value*)}\* *Quantity*} for the open quantity of each transaction that comprises the open position, where the sign of the Quantity follows these rules

If the product is an option with the PremiumPaymentConvention attribute not equal to 'VariationMargined':

- Flow type = "NPV"
- SettleCurrency = The settle currency defined on the product
- Amount = 0

#### NPV\_REV Cashflow

For accounts in Margin Mode of OTE or Realized VM, generate as follows:

Will be equal but opposite direction to the NPV amount on the previous day's CT trade with the equivalent trade attributes. If no CT trade is found, the amount will equal 0.

The previous day is the preceding business day subject to the holiday calendar designated on the PO under the ClearingBusinessCalendar attribute.

#### **NOV Cashflow**

For the selected trade, if the product is a Future, or an Option with the PremiumPaymentConvention attribute = 'VariationMargined':

- Flow type = "NOV"
- SettleCurrency = The settle currency defined on the product
- Amount = 0

If the product is an option with the PremiumPaymentConvention attribute not equal to 'VariationMargined':

- Flow type = "NOV"
- SettleCurrency = The settle currency defined on the product
- Amount = Sum of { *Market Price* \* *Tick Size* \* *Tick Value* \* *Quantity* } for the open quantity of each individual transaction that comprises the open position, where the sign of the Quantity follows these rules

#### NOV\_REV Cashflow

Will be equal but opposite direction to the NOV amount on the previous day's CT trade with the equivalent trade attributes. If no CT trade is found, the amount will equal 0.

The previous day is the preceding business day subject to the holiday calendar designated on the PO under the ClearingBusinessCalendar attribute.

### FWD\_DISC\_OTE Cashflow

For Accounts in MarginMode = OTE, generate an OTE flow as follows.

For the selected trade, if the product is a Future with the PremiumPaymentConvention attribute = 'VariationMargined' and the Exchange set to a LE with a MIC value of "LME":

- Flow type = "OTE"
- SettleCurrency = The settle currency defined on the product

• Flow Amount = Sum of {Round(*Market Price* \* *Tick Size* \* *Tick Value*) – *Round*(*Traded Price* \* *Tick Size* \* *Tick Value*)}\* *Quantity*} for the open quantity of each transaction that comprises the open position, where the sign of the Quantity follows these rules

If the product is an option with the PremiumPaymentConvention attribute not equal to 'VariationMargined':

- Flow type = "OTE"
- SettleCurrency = The settle currency defined on the product
- Amount = 0

#### FWD\_DISC\_OTE\_REV Cashflow

For accounts in Margin Mode of OTE or Realized VM, generate as follows:

Will be equal but opposite direction to the OTE amount on the previous day's CT trade with the equivalent trade attributes. If no CT trade is found, the amount will equal 0.

The previous day is the preceding business day subject to the holiday calendar designated on the PO under the ClearingBusinessCalendar attribute.

## 10.2.2 VM Collateral Exposure Trades (OTE Model Only)

When an account is set to OTE Mode, we generate Collateral Exposure trades to apply towards the Initial Margin calculation amounts, instead of treating the OTE as cash. The logic to generate those trades is below. Note that the OTE measure on the Collateral Exposure will be the total OTE across all position accounts associated to a single Collateral (Parent) Account for each unique settlement currency in the account.

Trade Element	Population Logic
Counterparty	The LE on the Collateral Account to which the trade/position is associated
Book	The default Client or House Clearing Book specified on the PO, based on the Origin of the Account to which the Margin Group is associated
Contract Id	The ID of the Liability Contract stored in the "Liability" attribute of the Account to which the Collateral Account is associated.
Instrument	Hard coded to Initial Margin
Currency	The Currency of the calculated OTE amount. Only one currency is allowed per Collateral Exposure, but Collateral Exposures in multiple currencies can be produced for a single Margin Group.
Trade Keywords	<b>CCP</b> - The CCP on which the products being included in the margin calculation output are cleared. Portfolios are organized by CCP and Clearing Service.
	Account - The Collateral Account to which the trade/position is associated.
	<b>CCPOriginCode</b> - The value of the CCPOriginCode populated on the Collateral Account.
	<b>RelatedProductType</b> - The Clearing Service on which the products being included in the margin calculation output are cleared. Portfolios are organized by CCP and Clearing Service.
Pricer Measures	ОТЕ
	MARGIN_CALL

The Collateral Exposure will be created according to the following logic:

# Section 11. Initial Margin Calculation

### 11.1 Risk Files

# 11.1.1 Required risk files

• For each initial margin methodologies, risk files are required for the margin calculation. The required risk files are documented in the Calypso Margin Dashboard:

Sical ban usa fan - Lawan							
CALYPSO	° Margin					calypso_user US FCM 💌 🕇	Mar 2, 2017
Margin Groups Su	pported Exchanges Margin Model × Risk Parameters	×					
Q. Filter Exchange	5						
MIC	Legal Entity	Methodology	Exchange Spread	Risk Array Exchan	Parameter File Type	File Name Expression	Parameter
E NZEX		SPAN	ASXCLE	NZE			
E-WDER		SPAN	KDPW	GPW			
IT:XASX		SPAN	ASXCL	ETO			
IF XBRD		SPAN	MNP	MNP			
FF XBUD		SPAN	KELER	BET			
IF XCBF		SPAN	CFE	CEX			
F XCBO	CBOE (Chicago Board Options Exchange)	SPAN	CEE	CBO			
IF XCBT	CBOT (Chicago Board of Trade)	SPAN	CME	CBT			
IF XCEC	COMEX (Commodity Exchange of New York)	SPAN	CME	CMX			
E-XCME	CME (Chicago Mercantile Exchange)	SPAN	CME	CME			
T L.					ExpandedSPAN	'cme,'vvvvMMdd'.s.pa2.zip'	TXT
FI-XELX		SPAN	ELX	ELX			
XEUC		SPAN	MTE	MTE			
* XEUE		SPAN	MNP	MNP			
E XEUR	EUREX (Eurex)	PRISMA	EUREX				
T ha					PRISMA FX	01FOREXCRTPUBLEVyyyvMMddEODX.TXT.zip'	TXT
					PRISMA LFC	01LIOUFACTPUBLI'vvvvMMddEODX.TXT.zip'	TXT
					PRISMA MCC	01MRKTCAPAPUBLI'yyyyMMddEODX.TXT.zip'	TXT
					PRISMA RMAC	'01MRKTRISKPUBLI'yyyyMMddEODX.TXT.zip'	TXT
					PRISMA RMC	'01RISKMEASPUBLI'yyyyMMddEODX.TXT.zip'	TXT
					PRISMA STL	01STLPRICEPUBLI'yyyyMMdd'EODX.TXT.zip'	TXT
					PRISMA TH	01THEOINSTPUBLI'yyyyMMdd'OISERIESEODX0001_0001.TXT.zip'	TXT
XFNO		SPAN	BIST	BIST			
AHKE		SPAN	HKEX	нк			
⊞-XHKG		SPAN	HKEX	нк			
±-XKLS		SPAN	BMDC	BMD			
XLME	LME (London Metal Exchange)	SPAN	LME	м			
E XMAT		SPAN	MTF	MTF			
XMGE		SPAN	MGE	MGE			
⊕ XMOD		SPAN	CDC	CDC			
XMON		SPAN	MNP	MNP			
XNSE		SPAN	NSCCL	NSE			
th same	UNINESS (New York Manageria Funk an ex)	CDAN	CMF	and a			

**For example,** for the SPAN methodologies, one single risk file is required (risk array file). For EUREX PRISMA, 8 risk files are required.

#### The risk files are posted by the exchanges:

### • SPAN Risk Array files (for all methodologies currently supported, except PRISMA):

ftp://ftp.cmegroup.com/pub/span/data/cme/2017/

### • PRISMA risk and market data files:

aga WinSCP Login		? <u> </u>
Vew Site	Session Elle protocol: SFTP Host name: 193.29.90.129	Port number:
	User name: 1077543_000001	Password:
	Edit	Advanced 👻

### **PRISMA files descriptions:**

File Name	Abbreviation	Purpose
Theoretical Prices and Instrument Configuration	File TH	VaR for market risk component Compression error adjustment Correlation break adjustment Liquidity risk component
Settlement Prices	File SP	VaR for market risk component
Risk Measure Aggregation Configuration	File RMAC	Aggregation of <u>VaRs</u> for market risk component Aggregation of market risk components Aggregation of <u>VaRs</u> for liquidity risk component
Risk Measure Configuration	File RMC	VaR for market risk component VaR for liquidity risk component Correlation break adjustment
FX Rates Configuration	File FX	VaR for market risk component           VaR for liquidity risk component           Correlation break adjustment           Liquidity risk component
Market Capacity Configuration	File MCC	Liquidity risk component
Liquidity Factor Configuration	File LFC	Liquidity risk component

#### Important note:

Eurex PRISMA file names will change on June 12- the delivered software is based on the new file names, which can be retrieved from the Eurex sftp test files server:

		Current	Current values / conventions		re values / conventions	
File s name	File short name		IST	THE	:01	
I		I	Current values / conventions	Futur	e values / conventions	
	Risk Mea Configur	sure ation	RISKMEAS		RIMEC	
	Risk Measure Aggregation		MRKTRISK		MARIA	
	FX Rates		FOREXCRT		FOREX	
File	Market C	apacity	MRKTCAPA		MARCA	
name	Liquidity	Factor	LIQUFACT		LIQFA	
name	Settleme	nt Price	STLPRICE		STLPR	
	Materialii Paramete	:y er	MTRLPARM		МАТРА	
	FI & MM	Priority	FIMMPRIO		FIMMP	
	Maturity	Bucket	MATRTBKT		MATBU	

#### Example:

ictures

▼ → Computer → Calvpso 42 (\\sfclea	aring2.alias42) (O:) ▶ risk-arravs ▶ 20150519 ▶				<b>→ +</b>
e 🔻 New folder					
orites	Name	Date modified	Туре	Size	
esktop	01FILFOREXPUBLI20150519EUXCEODX.TXT.ZIP	5/30/2017 11:34 AM	Compressed (zipp	164 KB	
ownloads	01FILLIQFAPUBLI20150519EUXCEODX.TXT.ZIP	5/30/2017 11:36 AM	Compressed (zipp	1 KB	
ecent Places	01FILMARCAPUBLI20150519EUXCEODX.TXT.ZIP	5/30/2017 11:37 AM	Compressed (zipp	44 KB	
eployment	3 01FILMARIAPUBLI20150519EUXCEODX.TXT.ZIP	5/30/2017 11:41 AM	Compressed (zipp	1 KB	
	01FILRIMECPUBLI20150519EUXCEODX.TXT.ZIP	5/30/2017 11:33 AM	Compressed (zipp	1 KB	
raries	01FILSTLPRPUBLI20150519EUXCEODX.TXT.ZIP	5/30/2017 11:29 AM	Compressed (zipp	172 KB	
ocuments	01FILTHEOIPUBLI20150519EUXCOIEODX01_01.TXT.ZIP	5/30/2017 11:28 AM	Compressed (zipp	52,667 KB	
lusic					

### 11.1.2 Risk files location

• The risk array files should be stored in a risk file folder, using the following syntax:

<Calypso user folder>/risk-arrays/yyyymmdd

<Calypso user folder>/clearing/yyyymmdd

Risk files will be organized by risk file dates, ie risk file as of "yyyymmdd" should be stored in the corresponding date folder.

### • The default behavior is to use:

<Calypso user folder>/risk-arrays

<Calypso user folder>/clearing as caching folder

- When running margin from the CLEARING\_IM\_CALC\_ST, this Calypso user folder should be defined on **the machine where the scheduler is running.**
- When running the margin dashboard, or the clearing dashboard trying to obtain FOW files, the Calypso user folder will be defined **on the users' machine.**

To change the default behavior, the configuration file can be updated in:

client/resources/clearing-data-manager.yml file. Sample file below:



ger.yml.sample

### Example of SPAN risk file storage:



#### Example of EUREX PRISMA file storage:

• compacer • collypso_42	(()/cicalingeraliaste) (o), V lisk alrays V 20130515 V			
e 🔻 New folder				
prites	Name	Date modified	Туре	Size
sktop	01FILFOREXPUBLI20150519EUXCEODX.TXT.ZIP	5/30/2017 11:34 AM	Compressed (zipp	164 KB
wnloads	01FILLIQFAPUBLI20150519EUXCEODX.TXT.ZIP	5/30/2017 11:36 AM	Compressed (zipp	1 KB
cent Places	01FILMARCAPUBLI20150519EUXCEODX.TXT.ZIP	5/30/2017 11:37 AM	Compressed (zipp	44 KB
ployment	01FILMARIAPUBLI20150519EUXCEODX.TXT.ZIP	5/30/2017 11:41 AM	Compressed (zipp	1 KB
	01FILRIMECPUBLI20150519EUXCEODX.TXT.ZIP	5/30/2017 11:33 AM	Compressed (zipp	1 KB
ries	01FILSTLPRPUBLI20150519EUXCEODX.TXT.ZIP	5/30/2017 11:29 AM	Compressed (zipp	172 KB
cuments	01FILTHEOIPUBLI20150519EUXCOIEODX01_01.TXT.ZIP	5/30/2017 11:28 AM	Compressed (zipp	52,667 KB
isic				
ctures				

### 11.2 Navigator

Add the following menu items if not already available:

• Margin Dashboard (menu action clearing.MarginDashboard)

🛓 Tile B	ditor	
[	Select from Menu	
Name	Margin	
Hint		
Action	clearing.MarginDashboard	
Key		This tile has no mnemonic.

### 11.3 Account Setup

Example of end to end account setup (including collateral accounts, clearing account, and margin groups).

### **Parent Account**

The Parent Account is linked to collateral Bilateral Contracts

Margin Groups are defined at the Parent Account level

ZAccounts Definition - Authorization mod	le OFF CLIENT 2 PAREN	T / 306229 - version 0	
Account Utilities Reports Process Help			
Account Statements Attributes Interests L	imits Consolidation Tra	nslation/Revaluation Clear	ring
Properties			
Base Currency: USD 💌 Activity Type: Hec	lge 💽 Origin Code:	Client	
Margining			
🧹 Collateral	🖉 Has Children 🛛 🛷 is i	Grouping	
Margin Mode: Realized VM	Margin Group For Children		
Deposit: CLIENT_2 VM(430303)	<b>F</b>		
Liability: CLIENT_2 IM(430302)	Name	Multiplier	Netting
	MG1	1.1	Net
	MG2	1	Net
	MG3	1	Net

	Accounts Definition	- Authorization mode OFF CLIENT 2 PARENT / 306229 - version 0
Acc	ount Utilities Repo	rts Process Help
Acc	ount Statements At	tributes Interests Limits Consolidation Translation/Revaluation Clearing
	Account Name	CLIENT 2 PARENT
	Durana in a Our	
	Processing Org	
	Туре	SETTLE SubType Clearing Auto/Template Acc
	External Name	Q Interface Rule Aggregate
		· Ac
	Description	Ac
	Legal Entity (F2)	CLIENT_2 Role V
	C	
	Creation Date	5/4/17 6:58:17 PM IM Create by Acc Engine only
	Closing Account	···· Last Closing Date
	Deveet Accesset	
	Parent Account	Parencio o
	External Settl.	External Cash Account

Client Accounts are linked to a Parent Account:

1	Accounts Definition - Authorization mode OFF CLIENT 2 / 306233 - version 0
	Account Utilities Reports Process Help
	Account Statements Attributes Interests Limits Consolidation Translation/Revaluation Clearing
:	Properties
	Base Currency: USD 💌 Activity Type: Hedge 💌 Origin Code: Client 💌
	Margining
	Account Hierarchy
	Parent: CLIENT 2 PARENT (306229) 💌 Parent Margin Group: MG2 💌

Important note: Several clients can be part of the same margin group.

It means that the position aggregation required to calculate margin is done at the margin group level, and not at the client account level.

### 11.4 Positions

## 11.4.1 Position Keeper Report

Position by margin groups - used for the Initial Margin calculation- can be viewed in the position keeper.

Product Hierarchy Position By Settle Date Liquidation Keys Name: defau						lation Keys Name: default, Clien	:Account=[5	;0358]	Ŧ	
Pricing En	iv jaerauic	<b>•</b>	Aggrega		ci. Fees in Position					
			Zero Posit	ions Include	nce 0.0					
			2610 POSIC		nce jolo					
All										
M	larging Group 🔬	Aggregation	Product Id	Liq. Aggregation	Liq. Aggregation ID	Position Id	Description	Realized	Nominal	Current
PSW II	M Parent USD.MG3	US FCM Client Clearing	687712	ClientAccount:50358CounterPartyAccount:56703	31002	15365	XCBT-06-F/JAN18	0.00	1,500.00	USD
PSW I	M Parent USD.MG3	US FCM Client Clearing	665060	ClientAccount:50358CounterPartyAccount:56703	31002	15353	XNYM-CL-F/APR18	0.00	15,000.00	USD
PSW II	M Parent USD.MG3	US FCM Client Clearing	957293	ClientAccount:50358CounterPartyAccount:56703	31002	15366	XCBT-06-O/PUT/510.00/SEP16	0.00	20.00	USD
PSW II	M Parent USD.MG3	US FCM Client Clearing	712378	ClientAccount:50358CounterPartyAccount:43830	29516	14778	IFEU-BUL-O/PUT/60/28MAR17	0.00	0.00	USD
PSW II	M Parent USD.MG3	US FCM Client Clearing	957288	ClientAccount:50358CounterPartyAccount:56703	31002	15354	XNYM-LO-O/PUT/55.00/JAN18	0.00	20.00	USD
			1			11010	TEEL DUIL O/DUT/CO/DOMAD.17	0.00	00.00	
PSW I	M Parent USD.MG3	US FCM Client Clearing	712378	ClientAccount:50358CounterPartyAccount:55202	30503	14918	IFEU-BUL-O/PUT/60/20MART/	0.00	20.00	USD
PSW II PSW II	M Parent USD.MG3 M Parent USD.MG3	US FCM Client Clearing US FCM Client Clearing	712378 681586	ClientAccount:50358CounterPartyAccount:55202 ClientAccount:50358CounterPartyAccount:43830	30503 29516	14918	IFEU-B-F/APR18	0.00	20.00	USD

## 11.4.2 Position CSV File

Position by margin groups - used for the Initial Margin calculation- are exported in a csv file:

ļ	A	В	С	D	E	F	G
	Exchange	Currency	Product C	Contract <sup>-</sup>	Strike Pri	Expiry Da	Quantity
	I	USD	В	F		201804	15
	I	USD	BUL	Р	60	201703	20

#### Path to access the position and detailed report files:

📙 InitialMargin										
O ↓ The computer + Local Disk (C:) + Users + sophie_foy + Calypso + InitialMargin										
Organize 🔻 🚺 Open 👻 Share with 👻 Print Burn New folder										
Incorresaless	Name									
🍌 InitialMargin	CME CLEADING GROUP SPAN PSW/ IM Parent LISD M									
limitsMARGINV15										
Teference-data	Kather Content Cont									
	TCELL SPAN DSW, IM Parent LISD, MG1, DetailedPenort									
📗 risk-arrays										
BISKCONTROLMARGINV15	ICEU_SPAN_PSW_IM_Parent_USD_MG1_PositionReport_; —									

### 11.5 Booking date

Trades are included in the position as long as the trade settlement date is prior or equal to the booking date. The booking date allows for late trade booking.

The booking date needs to be updated once all trades have been booked for a selected business date. It is controlled by the following Legal Entity Attribute:

🔀 Legal Entity- Ve	ersion - 5 [144005/cle	aring	42/santil]										83		2015
Utilities Help														»	
Short Name	US FCM				Status	Enal	bled		•						Calcul
Full Name	US FCM				Role(s)	Ager	nt							ン	
Parent						Clien	er it							Check	
Country	UNITED STATES		•][			Cour	nterPar	ty							
Inactive As From		User	bspota		Legal Entity Att	tribut	tes Wir	ndow - Versior	n - 12						x
Entered Date	07/27/2015	11:5	8:30 AM								_				
External Ref					Legal Entit	У	US FCI	М			Role	ALL			•
Holidays	NYC	· · · ·	Final		Processing Org		ALL			•					
			non 💿 Non	F	Attribute Type	э	Bookir	ig Date		- -   [	Value	05-19-2015			
								-							
					Id Proces	sing (	Org	Legal Entity	Role	Atl	ribute Type		Attrit	oute Value	
					1510 ALL			US FCM	ALL	Clie	nt Execution	Book	US FC	M Client Execu	ution
					1512 ALL			US FCM	ALL	Hou	ise Execution	Book	US FC	M House Clear	ring
					1516 ALL			US FCM	ALL	Clie	nt Clearing B	ook	US FC	M Client Cleari	ing
					1519 ALL			US FCM	ALL	Def	aultClientAcc	ount	US FC	M Omnibus	
					1513 ALL			US FCM	ALL	Def	aultErrorAcco	ount	USF-E	RR	
Comment	US Domiciled ETD Futu	res Co	mmission Merch	1	1517 ALL			US FCM	ALL	Hou	ise Clearing E	look	US FO	M House Clear	ring
					1509 ALL			US FCM	ALL	Cle	aring Busines:	s Calendar	NYC		
					43503 ALL			US FCM	ALL	CF1	CID		0001		
					48217 ALL			US FCM	ALL	CM	E CLEARING (	GROUPETDFirmId	4Q0		
Attributes	Legal Agreeme	ent	Contact	1	50103 ALL			US FCM	ALL	Boo	king Date 👘		05-19	-2015	
	] [ ] ]				43102 ALL			US FCM	ALL	ACO	_USE_BUSIN	IESS	yes		
Custom	Registration		Relation		43103 ALL			US FCM	ALL	ACO	_BUSINESS_	DATE	01-05	-2017	
Ref Ob	LE Id 1507 New Delete		Save		Load		elete	Save				Authorization	n	Clo	ose
					Show Pend	ding A	Authoriz	ations							

### 11.6 Collateral Contracts

Please ensure that your Collateral Contracts are defined as described in the Calypso ETD Clearing Setup Guide.

Example of bilateral CCP Facing Contract:

Dội 🚥 ≈t tt	
Others	
ACCOUNT_NAME	
CCP	
CCP_ORIGIN_CODE	CLIENT
CCP_REFERENCE	
CCP_SEGREGATION_ACCOUNT	
CLIENT_TRANSFERS	
DISPUTE_COMMENT_MANDATORY	
EXCLUDE_REPO_INTEREST	
EXCLUDE_SECLENDING_INTEREST	
IGNORE_ALLOW_EX_DIVIDEND	
IM_IMPORT_CURRENCY	
INCLUDED_VM_FLOWS	
-INTEREST_DATERULEONLY	
MARGIN_TYPE	IM
PRODUCT_TYPE	ETD
REINVEST_COUPOIN	
SEPARATE_VM_SETTLEMENT	
USE_RECONCILIATION	

## 11.7 IM Calculation and Reporting

The margin can be run using the scheduled task CLEARING\_IM\_CALC, or from the Margin Dashboard.

The margin output will be available:

- In the margin dashboard
- In a csv file
- In the form of PL Mark to be used by the collateral manager

• In the client statement

# 11.8 Process from Positions to Initial Margin

Input to the IM Schedu	nput to the IM Scheduled Task Position by client Account								
Info sent to the Span G	alculator (VAR ca	alculator)							
	Position by Ma	argin Group							
Span/VAR Calculator O	utput								
	For the creation	on of PL Marks and Client S	statement						
	Only in native	eccy							
BusDate MMDDYY1Clearing D	rg	MarginGroup/CollateralName	CC name	CC ccy	MAINT_MARGIN	INIT_MARGIN	NOV		
11/7/2014 CME		CME_31	CC1	USD	102786	113065	43506.25		
		CME_31	CC2	GBP	200	100	50		
		CME_31	CC3	USD	102786	113065	43506.25		
Creation of PL Marks	$ \longrightarrow $	CET1 (CME_31/USD)			205572	226130	87012.5		
		CET2 (CME_31/GBP)			200	100	50		

# 11.9 Running the Scheduled Task CLEARING\_IM\_CALC

	External Reference	ID	Type ∠1	Trade Filter	Processing Org	SLA
Ê	CALC IM EUREX COUNTERPA	122121	CLEARING_IM_CALC		US FCM	5
Ê	CALC IM EUREX	121120	CLEARING_IM_CALC		US FCM	5
Ê	IM CALC CME	122122	CLEARING_IM_CALC		US FCM	5
	IM CALC CME AA123	120120	CLEARING_IM_CALC		US FCM	5
Ê	CRS LCH @ HSBC	123122	CLEARING_RISK_SERVICE	AMLCH@HSBC	FCM	15
Ê	Calculate IM and VM	116120	CLEARING_RISK_SERVICE	AMCME@HSBC	FCM	15
Ê	Calculate IM and VM - CME	117120	CLEARING_RISK_SERVICE	Client1	FCM	15
r Ba					l=	l

Scheduled Task Definition	
Scheduled Task Definition	
Use the dialog below to define the attribute	; for the task to be executed. These attributes will control the behavior of the task. There are two types
and task specific attributes. Scheduling of t	he task is performed using the Task Trigger Definition dialog
Task Description	
Task Type: CLEARING_IM_CALC	
External Reference: PSW IM Calculation - IC	11.CME
Connector DSUUTM Colordation TC	
Comments: IPSW IM Calculation - IC	U, LIME
Description: PSW IM Calculation - ICI	U,CME
Execution Parameters	
Attempts: 1 Retry After: 0	minutes Expected Execution Time (SLA): 5 minutes
IVM Settings: -Xms512m -Xmx3g -XX:MaxPerr	,, jSize=256m
Shiribotaligi Talibotali Alixog Alimax of	
Log Settings: JitionCollectorPositionDetail,Bate	hLiquidation,Liquidation,com.calypso.tk.clearing.im.MarginPositionProducer,PositionTradeCollector,Positic
Task Notification Options	
Send Emails Dublish Business Event	Tolker:
Valuation Time Hour	18
Valuation Time Minute	0
Undo Time Hour	
Undo Time Minute	
Valuation Date Offset	
To Days	
Pricer Measures	
Business Holidays	
Task Attributes	
CCP/ClearingHouse	ICEU, CME CLEARING GROUP
Clearing Service	ETD
Account Type	ALL
Collateral Accounts	PSW IM Parent USD
(and	
Scheduled Task Definition	X
Scheduled Task Definition	
Use the dialog below to define the attributes for the task to b across all tasks and task specific attributes. Scheduling of the	executed. These attributes will control the behavior of the task. There are two types of attributes, general attributes which are the same
Task Description	ask is performed using the rask migger bennition dialog
Task Type: CLEARING_IM_CALC	Y
External Reference: EUREX A2	
Comments: EUREX A2	
Description: EUREX A2	
Execution Parameters	
Attempts: 1 Retry After: 0 minutes	Expected Execution Time (SLA): 60 minutes
JVM Settings: -Xms512m -Xmx4096m -XX:MaxPermSize=1024m	
Log Settings: ulator, PositionLoadingMarginCalculator, ETDCleari	gPositionCollectorPositionDetail,ScheduledTask,IMCalculatorUnitOfWork,PositionTradeCollector,PositionTradeCollectorPositionDetail
Task Notification Options	
🗌 Send Emails 📄 Publish Business Events 🛛 To User: 📗	¥
Pricing Environment	EUREX
Timezone	America/New_York
Valuation Time Hour Valuation Time Minute	22
Undo Time Hour	
Undo Time Minute Valuation Date Offset	
From Days	
To Days	
Pricer measures Business Holidays	
Task Attributes	
CLP/ClearingHouse	EUREX CLEARING ETD
Account Type	Counterparty
Collateral Accounts	EUREX MASTER AC

### 11.9.1 Logs to track the possible errors, and calculation details

### FOR SPAN and EUREX PRISMA CALCULATION:

# The following log is available from the Scheduled Task menu, or from the Margin Dashboard (Click on the Icon in the "Detail" column)

Scheduled Task Lo	g Viewer				
Scheduled Task Lo	og Viewer				
This window allows	you to browse the logs for a s	pecific scheduled tas	ik		
				🔲 Errors Only	к «
CLEARING_IM_CALC exe	cuted on 6/17/16 9:05:53.093	3 AM PDT		🚺 131 lines	\rm 1 errors
# Level	Category	∆ <b>1</b>	Message	Time	
Time:2016-06-17 09:06: Category:com.calypso.5 Message: Calculation log: Throwable: Using LCH SPAN File = ici For Portfolio Id = Multike ** Position Quantities Fo I> BRN> B> F> I> BRN> BUL> O ** Position Quantities Fo I> BRN> B> F> I> BRN> B> F> I> BRN> B> F>	10,171-0700 Level:DEBUG Thr icheduledTask e.20160602.pa6 ey[PSW IM Parent USD (49759 or Scanning BEFORE SPLIT-ALL > 201804->15.0 >> 201703> P> 60- or Scanning AFTER SPLIT-ALLC > 201804->15.0 >> 201703> P> 60-	), Has Children, do ( .OCATION (Format : .>20.0 OCATION (Format : E .>20.0	3 Host:31010 Grouping, , MarginGroup [t ExchangeCode->Combine xchangeCode->Combined	ype=Parent, groupName=MG3, s dCommodityCode->ProductCode- CommodityCode->ProductCode->	etting=Riské >ContractT
** Split Allocation ** No Split Positions detects ** ScanningRisk ** For Combined Commodit; ScanningRisk = 8550.00 -7800.00 8200.00 -975 For Product Code = B(F 0.00 0.00 -18150.00 - Scan Range : 0.00 0.00 -121.00 -122 For Product Code = BUL( -7800.00 8200.00 8400 Scan Range : -39.00 41.00 42.00 12	ed in the portfolio y Code = BRN Active Scenario Number = 6 I 0.00 7050.00 -6450.00 855 > 201804) ScanningRisk = 1 18150.00 18150.00 18150.0 1.00 121.00 121.00 -243.00 (O>> 201703> P> 6 0.00 25200.00 -24600.00 -9 26.00 -123.00 -48.00 118.00	nterTierNumber = 0 0.00 -12850.00 479 8150.00 Active Scer 0 -36450.00 -36450 0 -243.00 243.00 2 50) ScanningRisk = - 600.00 23600.00 4 0 206.00 -212.00 -	RiskArray : 50.00 -5950.00 8050.00 hario Number = 6 InterTier 0.00 36450.00 36450.00 43.00 -364.00 -364.00 3 9600.00 Active Scenario N 1200.00 -42400.00 -2840 142.00 190.00 281.00 -3	-16600.00 1600.00 -6400.00 6 Number = null RiskArray : -54600.00 -54600.00 54600.00 64.00 364.00 -255.00 255.00 umber = 6 InterTierNumber = null 00.00 38000.00 56200.00 -6100 05.00 -240.00 151.00 -204.00	500.00 -805 54600.00 Active Value RiskArray : 0.00 -4800 Active Valu
					<b>T</b>

# 11.9.2 Additional log info for EUREX PRISMA calculation

Additional logs are available as cvs files, detailing the PL Vectors used for the calculation of Initial Margin.

Examples:

x

		L
		)
	1	Ľ

x





scenarioSubSample scenarioSubSample scenarioSubSample PnLVectorsStress.cs PnLVectorsHistorica \_Stress\_FX.csv \_Stress.csv \_Historical.csv v l.csv

## 11.10 Calculating the Initial Margin from the Margin Dashboard

It is also possible to run the margin interactively from the margin dashboard: Select "Run" button on the right side of the screen:

🔀 Calypso Margin - CLEARING428										
CALYPSO <sup>®</sup> Margin							calypso_user	US FCM	👻 Jun 2, 2016	-
Q,- Filter Margin Groups										c
PAUL PARENT HOUSE		Currency	Margin R	equirement	Markup	Net Option Value	Total Margin	Detail	Calculat	.e
	B	LISD		0.00	0.00	0.00	0.0	1		-
		0.50		0.00	0.00	0.00	0.0	,		
PAUL REGRESSION LIABIL	JIY	USD		0.00	0.00	0.00	0.0	,		
PAUL TEST										
PAUL TEST LIABILITY CO	NTRACT	USD		0.00	0.00	0.00	0.0	)		
🕆 🇾 PAUL TFE										
PAUL TFE LIABILITY		NTD		0	0	0		)		
🕆 🇾 PAUL'S TRADING										
PAUL LIABILITY		GBP		0.00	0.00	0.00	0.0	)		
🔻 🇾 PSW IM TEST										
👻 🚍 PSW USD LIABILITY		USD		-138,379.00	-20,840.00	-341,300.00	-1,189,053.8	)		
- 📥 MG1		USD		-68,358.00	-6,835.80	-1,012,600.00	-1,189,053.8	0		
CME CLEARING GROU	JP (CME) - SPAN	USD		-41,450.00	-4,145.00	-729,600.00	-848,155.0		🕕 Ru	h
리 ICEU (ICE) - SPAN		USD		-26,908.00	-2,690.80	-283,000.00	-340,898.8	. 🔳	🗈 Rur	n
▶ ■ MG2	Maroin Calculation Dataile							<b>V</b>		
→ 🗐 MG3	an argin calculation becalls		Currency	Margin Requirement	Markun	Total Margin	Account Type CC Cor	le l		
- T OAFP-T1	👻 🚍 CME CLEARING GROUP (C	ME) - SPAN	USD	-41,450.00	-4,145.00	-848,155.00		-		
	▶   06		USD				06			
P WACP-11 Liability	NY-CL		USD				NY-CL	_		

# 11.11 Definition of PL Marks

The following measures are calculated as defined below:

PL MARK	IM Dashboard	Definition
MAINTENANCE_MARGIN	MARGIN	Core margin computed by calculator= MAX(Commodity Risk Charge; Short Option Minimum) * Risk Maintenance Performance Bond Adjustment Factor where Risk Charge = Scanning Risk + Intra-Commodity Spread Charge + Delivery Month (Spot) Charge - Inter-Commodity Spread Credit
NOV	NOA	Net Option Value
MAINTENANCE_MARGIN_MARKUP	MARK-UP	MAINTENANCE_MARGIN * ( Multiplier)
MARGIN_CALL	TOTAL MARGIN	For Client Accounts, Min[(MAINTENANCE_MARGIN + NOV) *(1+Multiplier), 0)] For Counterparty Accounts, Max[(MAINTENANCE_MARGIN + NOV) * (1+Multiplier), 0)]
Multiplier		Calypso Multiplier defined at MG for each acct

ALL MARGIN NUMBERS ARE EXPRESSED IN THE MARGIN CURRENCY, WHERE MARGIN CURRENCY IS DEFINED AS: (1) Combined Commodities currency for SPAN methodologies

(2) VAR base currency for EUREX

FOR EACH CURRENCY and EACH MARGIN GROUP, a PL MARK will be saved, in the margin currency

Example of output:

PLMark Report (5/	JPLMark Report (5/31/17 4:01:44 PM)											
Report Data View	Report Data View Export Utilities Help											
23 Othera												
Position/Trade	Position or Trade Id	Туре	Pricing Env	Val Date	Book	Currency 🔬	Measure Name	Sub Id	Measure Value	C		
Trade	6901	NONE	default	May 31,2017	US FCM Client Clearing	USD	IM_EXPOSURE		(66,500.00)	USD		
Trade	6901	NONE	default	May 31,2017	US FCM Client Clearing	USD	INITIAL_MARGIN		(73,150.00)	USD		
Trade	6901	NONE	default	May 31,2017	US FCM Client Clearing	USD	INITIAL_MARGIN_MARKUP		0.00	USD		
Trade	6901	NONE	default	May 31,2017	US FCM Client Clearing	USD	MAINTENANCE_MARGIN		(66,500.00)	USD		
Trade	6901	NONE	default	May 31,2017	US FCM Client Clearing	USD	MAINTENANCE_MARGIN_MARKUP		0.00	USD		
Trade	6901	NONE	default	May 31,2017	US FCM Client Clearing	USD	MARGIN_CALL		(66,500.00)	USD		
Trade	6901	NONE	default	May 31,2017	US FCM Client Clearing	USD	NOV		0.00	USD		
Trade	7204	NONE	default	May 31,2017	US FCM Client Clearing	USD	IM_EXPOSURE		0.00	USD		
Trade	7204	NONE	default	May 31,2017	US FCM Client Clearing	USD	INITIAL_MARGIN		(216,500.00)	USD		
Trade	7204	NONE	default	May 31,2017	US FCM Client Clearing	USD	INITIAL_MARGIN_MARKUP		0.00	USD		
Trade	7204	NONE	default	May 31,2017	US FCM Client Clearing	USD	MAINTENANCE_MARGIN		(216,500.00)	USD		
Trade	7204	NONE	default	May 31,2017	US FCM Client Clearing	USD	MAINTENANCE_MARGIN_MARKUP		0.00	USD		
Trade	7204	NONE	default	May 31,2017	US FCM Client Clearing	USD	MARGIN_CALL		0.00	USD		
Trade	7204	NONE	default	May 31,2017	US FCM Client Clearing	USD	NOV		1,806,000.00	USD		

# 11.12 Initial Margin Reporting Tools

# 11.12.1 Margin Dashboard

### Information about supported exchanges and available risk array files:

### (click on the wheel to open the panel)

CALYPSO Margin Colypso Liser US FCM S An 17, 2010	
Q, Fiter Margin Groups	
CALYPSO Margin - CLEARING428	Q
CALYPSO Margin - CLEARING428	
CALYPSO® Margin	
calypso_user	US FCM
Margin Groups Risk Parameters X	
Q- Filter Risk Parameters	
Methodology Exchange Spread Type Name Date VI	Pr
SPAN         CME         ExpandedSPAN         cme.20160606.s.pa2         2016-06-06         6/7/16 7:30:16.59	8 PM PDT
SPAN         CME         ExpandedSPAN         cme.20160603.s.pa2         2016-06-03         6/6/16 2:41:45.43	8 PM PDT
SPAN ICE London/SPAN ice.20160602.pa6 2016-06-02 6/3/16.3:12:42.96	1 PM PDT
SPAN CME Expanded5PAN cme.20160602.s.pa2 2016-06-02 6/3/16 2:56:54.00	5 PM PDT
SPAN         ICE         LondonSPAN         ice.20160525.pa6         2016-05-25         6/10/16 4:36:15.3	

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### Zalypso Margin - CLEARING42B

### CALYPSO<sup>®</sup> Margin

### Margin Groups Risk Parameters 🗙 Supported Exchanges Margin Model 🗙

Q. Filter Exchanges

MIC	Legal Entity	Methodology	Exchange Spread	Risk Array Exchang
€-CMED	CMEEUR (CME Europe)	SPAN	CEE	CEE
⊕-DGCX		SPAN	DCCC	DGCX
⊡∙DUMX		SPAN	CME	NYM
	ENCLEAR (LCH EnClear)	SPAN	EDX	E
🕂 ERIS		SPAN	CME	CME
⊡ IFCA	IFCA (ICE Futures Canada)	SPAN	WCE	C
iteD	IFED (ICE Futures Energy Division)	SPAN	ICE	I
i IFEU	IFEU (ICE Futures Europe)	SPAN	ICE	I
iteri	IFLL (ICE Financial Products Division)	SPAN	LIFFE	L
IFLO	IFLO (ICE Equity Products Division)	SPAN	LIFFE	0
⊡ · IFLX	IFLX (ICE Agricultural Product Division)	SPAN	LIFFE	Х
⊞⊡IFSG	IFSG (ICE Future Singapore)	SPAN	ISG	G
IFUS	IFUS (ICE Futures U.S.)	SPAN	NYB	N
⊡ •MFOX	ENX-PT (Euronext Derivatives Lisbon)	SPAN	MNP	MNP
⊡ •NDEX		SPAN	ICE	I
<u> </u> •NZFX	NZF (New Zealand Fut. & Option Exchange)	SPAN	ASXCLF	NZF
	GPW (Warsaw Stock Exchange)	SPAN	KDPW	GPW
i → XASX	ETO (ETO)	SPAN	ASXCL	ETO
	ENX-BE (Euronext Derivatives Brussels)	SPAN	MNP	MNP
terreterreterreterreterreterreterreter	BET (Budapest Stock Exchange)	SPAN	KELER	BET
		SPAN	CFE	CFX
	CBOE (Chicago Board Options Exchange)	SPAN	CFE	CBO
⊡-XCBT	CBOT (Chicago Board of Trade)	SPAN	CME	CBT
	COMEX (New York Mercantile Exchange - Comex Division)	SPAN	CME	CMX
	CME (CME)	SPAN	CME	CME
i → XELX		SPAN	ELX	ELX
EUC	ENX-EUC (Euronext Commodities Amsterdam)	SPAN	MTF	MTF
	ENX-EUE (Euronext Derivatives Amsterdam)	SPAN	MNP	MNP
€-XEUR	EUREX (Eurex)	PRISMA	EUREX	
i ∰-XFNO		SPAN	BIST	BIST
È∙XHKF	HKF (Hong Kong Futures Exchange LTD)	SPAN	HKEX	HK
È∙XHKG	HKG (Hong Kong Exchanges & Clearing)	SPAN	HKEX	НК
É∵XKLS		SPAN	BMDC	BMD
⊡ · XLME	LME (London Metal Exchange)	SPAN	LME	М
	ENX-MAT (Euronext Derivatives Paris)	SPAN	MTF	MTF
⊡∙XMGE	MGE (Minneapolis Grain Exchange)	SPAN	MGE	MGE

### Margin Dashboard Main View

Calypso Margin - CLEARING42B									-
CALYPSO <sup>®</sup> Margin							calypso_user	US FCM	👻 Jun 2, 2016
۲. Filter Margin Groups									
		Currency	Margin Re	equirement	Markup	Net Option Value	Total Margin	Detail	Calculate
		1100							
PAUL PARENT HOUSE LIAI	B	USD		0.00	0.00	0.00	0.00		
2 PAUL REGRESSION									
PAUL REGRESSION LIABIL	ЛТҮ	USD		0.00	0.00	0.00	0.00		
🔁 PAUL TEST									
PAUL TEST LIABILITY COL	NTRACT	USD		0.00	0.00	0.00	0.00		
2 PAUL TFE									
> 📁 PAUL TFE LIABILITY		NTD		0	0	0	0		
👔 PAUL'S TRADING									
> 📁 PAUL LIABILITY		GBP		0.00	0.00	0.00	0.00		
1 PSW IM TEST									
- 🔄 PSW USD LIABILITY		USD		-138,379.00	-20,840.00	-341,300.00	-1,189,053.80		
- 📥 MG1		USD		-68,358.00	-6,835.80	-1,012,600.00	-1,189,053.80		
CME CLEARING GROU	JP (CME) - SPAN	USD		-41,450.00	-4,145.00	-729,600.00	-848,155.00		🕕 Run
් ICEU (ICE) - SPAN		USD		-26,908.00	-2,690.80	-283,000.00	-340,898.80		ID Run
MG2	Margin Calculation Details						3	4	
MG3			Currency	Margin Requirement	Markup	Total Margin	Account Type CC Code	9	
🛐 QAEP-T1	💌 🔤 CME CLEARING GROUP (CME	) - SPAN	USD	-41,450.00	-4,145.00	-848,155.00			
> CAEP-T1 Liability			USD				06 NV 01	-	
	- HI-SL		0.00				NT-GL	-	

### Dashboard drill-down

Margi	n Calculation Details															×
qu	Total Margin	Account Type	CC Code	NOV	Active Scen	Scan Risk	IA Charge	Delivery Ch	IE Credit	SOM	Product Code	Contract Type	Quantity	Strike	Expiry Date	Strategy Rate
	-848,155.00															
			06	-417600.0		16000.0	10500.0	0.0	0.0	400.0	08	c	20	4.90	201600	
											06	F	15	100	201801	
			NY-CL	-312000.0		13150.0	1800.0	0.0	0.0	600.0						
											LO	С	-20	40	201801	
											CL	F	15		201804	
	so Margin - listed YPSO® Margir erl	1					_	_	_			62	lypso_user U	JS FCM	▼ Jun 15, 201	
C(+ mase	eil						and Development		Manlaur		- Colling Holes	Tabali	A	Debell		Coludate
-					Currenc	y   14	aryın Kedülremen		тапыр	N	scoption value	Tocan	nargin	Decall		Calculate
· • • •	REA CLEARING															
· •	Eurex Master Account	IM			EUR		7,577,9	76.24		0.00	0.0	0	7,577,976.24			
	🛑 A1				EUR			0.00		0.00	0.0	0	0.00	1		
F	🛑 A2				EUR			0.00		0.00	0.0	0	0.00			
F	<b>=</b> ] A3				EUR		5,406,6	00.01		0.00	0.0	0	5,406,600.01			
⊢ ⊢	<b>=</b> A4				EUR		2,171,3	76.23		0.00	0.0	0	2,171,376.23			

## 11.12.2 CSV Output

🔸 📰 PP

#### Available in user/Calypso/InitialMargin

	А	В	С	D	E	F	G	н	I	J	K	L	м	N	0	Р	Q
1	Clearing House	Exch spre	Margin Group	Account t	Exch	CC CCY	CC Code	TOTAL_RE	MAINT_M	INIT_MAR	NOV	Active Sce	Scan Risk	IA Charge	Delivery C	IE Credit	SOM
2	CME CLEARING GROUP		PSW IM Parent USD (49759)	S		USD		-388782	53925	59318	448100						
3	CME CLEARING GROUP		PSW IM Parent USD (49759)	S	CBT	USD	6		26480	26480	250700	12	15980	10500	0	0	0
4	CME CLEARING GROUP		PSW IM Parent USD (49759)	S	NYM	USD	NY-CL		27445	27445	197400	14	26310	1135	0	0	0

0.00

### 11.13 Covered Short Options

Calypso ETD solution will suppress the IM calculated for short equity option trades for a client account when the trades have been flagged as 'Covered'. To flag a trade as 'Covered' the user needs to set the trade attribute 'CoveredETDTrade' to True.

0.00

0.00

0.00

For 'Covered' trades the system will exclude these from the client accounts IM portfolio which is passed to the IM module resulting in zero IM for the client for these trades. The IM for the counterparty (CCP or the Carry Broker) will still be calculated as per the exchange's IM algorithm.

### 11.13.1 CoveredETDTrade trade keyword attribute

Trade attribute called 'CoveredETDTrade' of type Boolean (true/false).

EUR

This attribute can be set manually, via the Pricing Sheet, or by the Data Uploader trade file importer.

### 11.13.2 Initial Margining

'Covered' open quantity trades will be **excluded** from the client accounts portfolio that is passed to the IM module.

• IM will be zero for these trades for the client

'Covered' open quantity trades will be **included** in counterparty accounts portfolio that is passed to the IM module.

• IM will be calculated for these trades for the counterparty

### 11.13.3 Initial Margin Reports & Logs

The IM summary and detailed reports and logs will not include the 'Covered' trade because these will not have been passed to the IM module, which produces the reports.

# **Section 12. Client Statement**

The scheduled task ACCOUNT\_STATEMENT is used to generate client statements as part of the EOD process.

This section describes the process for generating a daily Client Statement from the Back Office clearing solution as well as information about the content of our supported statement template.

The current version of the Client Statement supports reporting for transactions, offsetting, lifecycle, cash and security movements and account balances based on the state of the system at the end of the processing day. Backdated transactions/activity and account corrections are not currently supported.

### 12.1 Account Configuration

A client clearing account can be configured to generate a statement by adding one or more statement configurations to the "Statement" tab of the account, making sure it gets added and saved with a unique config id.

Account Sta	atements	Attribut	es Interests	Limits	Consolida	ation	Transk	ation/Re <sup>,</sup>	valuation	Clearing	Browse
		Stat	ement Type 🕻	learing	<b>•</b>						
Frequ	iency: D	aily		•							
Position <sup>-</sup>	Type: 🛕	ctual		_				•			
Position	Date:	wailable (	(Frozen)					•			
Active F	From:			То	:						
Message Co	onfig: 4	7727									
	Messa	ge Type:	CLEARING_E	ID_STA							
	Ē	emplate:	CalypsoCond	ensedE	TDStateme	ent.xsl	]				
		Format:	HTML								
	(	Gateway:	FILE								
	Last St	atement:	05/08/2017								
Config Id 9	Statemer	nt Type	Numbering	Last Sf	tatement	Zero	Ball	No Mvt	Client St	tatement G	eneration
48802 C	learing			05/08/2	2017				N/A		

The fields in the statement config are described below.

Field Name	Expected Value	Description
Statement Type	"Clearing"	
Frequency	"Daily"	Identifies this statement config as eligible to be run on a daily basis. Does not control the format or content of the output, just the timing.
Position Type	"Actual" "Theoretical"	The field controls how the account balances are displayed in the statement, based on the status of the inventory transfers. Actual is the standard value, but is configurable based on the user's business logic.
Position Date	Available (Frozen)	The field controls how the account balances are displayed in the statement, based on the status of the inventory transfers. It takes into account retro-active movements in the next statement.
Template	CalypsoCondensedETDStatement.xsl	Template used on the Message Setup for Receiver = Client
Active From/To	Dates	Allows the statement configuration to be active for a set period of time. When the user triggers the statement

Field Name	Expected Value	Description
		run for a processing date outside of this range, no statement will be generated.
Message Config	Message Config ID	Select the message configuration which is applicable to the account. The screenshot below shows the setup of the standard message config for the ETD statement.

## 12.2 Message Configuration

Edit Browse			
Product Type	N/A 🔻	Language	English (United States)
Event Type		Address Type	EMAIL 🔻
Message Type	CLEARING_ETD_STATEM 🔻	Gateway	FILE 🔻
Processing Org	ALL 🔻	Format Type	HTML 🔻
PO Contact Type	Default 🔹	Template	osoETDCondensedStatement.xsI
Receiver	ALL	SD Filter	
Receiver Role	Client 🔹	Audit Filte	er 🖉 🗸 🗸
Rec Contact Type	Default 🔹		
Grouping	▼		Matching Inactive
Config Id	38702 Delete	Save	Save As New

# 12.3 Scheduled Task ACCOUNT\_STATEMENT

Official client statements are generated by running the ACCOUNT\_STATEMENT scheduled task with a message type of 'CLEARING\_ETD\_STATEMENT'. This task checks all of the account statement configurations and generates official statements for valid configurations.

The task must be configured to generate statements for Legal Entities with a role of 'Client' by selecting 'Client' in the ST Role Attribute. Additional filtering can be added in the SD\_FILTER attribute to single out specific accounts or LEs.

The ACCOUNT\_STATEMENT valuation date and time should correspond to be just before the PO's Book EOD time (when comparing both in the same time zone) on the business date for which the statements are being generated.

Task Description									
Task Type:	ACCOUNT_STA	TEMENT							
External Reference:	QAT Generate (	lient Statemer	nts						
Comments:	QAT Generate Client Statements								
Description:	Description: QAT Generate Client Statements								
Execution Parameters									
Attempts: 1	Retry Aft	er: 0	minutes	Expected					
JVM Settings: -Xms51	2m -Xm×1024m	-XX:MaxPermS	iize=256m						
Log Settings:									
Task Notification Options -									
🔲 Send Emails 🛛	Publish Busines	ss Events 🛛 T	o User:						
E Common Attributes	5								
Task Attributes									
MESSAGETYPE		CLEARING_ET	D_STATEM	ENT					
ROLE		Client							
LEGALENTITY									
CURRENCIES									
CHECK_FREQUENCY									
EXCLUDE_ACCOUNT_	STATUS								
Prerequisite Check									
SD_FILTER		ClientAccount	QAT2						

#### Financial Summary

Each section other than the Converted Total is expected to have values in a single currency that fall under a single Regulatory Code, so there is no FX conversion required other than the conversion of the Net Liquidating Value. The Converted Total section is the sum of the values of each item from all of the individual sections, after each row has been converted into the statement currency using the FX Conversion rate displayed at the bottom of the section.

There are 2 'modes' of Financial Summary layout to choose from – RealizedVM and OTE – and the layout for each is shown below, followed by a description of each section, the source data and how they differ slightly in some of the sections dependent on the mode.

RealizedVM Mode		OTE Mode	
Opening Balance		Opening Balance	
	Commissions		Commissions
	Fees		Fees
	Realized PL		Realized PL
	Premium		Premium
	Option Cash Settlements		Option Cash Settlements
	Cash Movements		Cash Movements
	Daily Variation Margin Change	Closing Balance	
Closir	ng Balance		
		Variation Margin (OTE)	
Net Option Value		Net Option Value	
Account Liquidating Value		Account Liquidating Value	
Initial Margin		Initial Margin	
Securities on Deposit		Securities on Deposit	
Daily Initial Margin Change		Daily Initial Margin Change	
Variation Margin (OTE)		Daily Variation Margin Change	

Row Label	Description	Source Data
Opening Balance	The beginning cash balance of the Account at the start of day on the statement date.	The sum of the Opening Balances of the Commissions, Fees, Future PL, Option Premium, Option Cash Settlement and Cash Movements inventory buckets from the Inventory Position Report for the relevant Account on the statement date (and additionally Daily Variation Margin Change for RealizedVM Mode)
Commissions	The total Commissions related to activity on the statement date.	The total movements in the Commissions Inventory Bucket on the statement date for the relevant Account
Fees	The total Fees related to activity on the statement date.	The total movements in the Fees Inventory Bucket on the statement date for the relevant Account
Realized PL	The total realized cash related to positions which were closed out on the statement date.	The total movements in the Futures PL and on the statement date for the relevant Account.
Premium	The total option premium paid and received on the statement date.	The total movements in the Option Premium Inventory Bucket on the statement date for the relevant Account.
Option Cash Settlement	The total of exercise fee and cash option adjustment following cash exercise and corporate action	The total movements in the Option Cash Settlement Bucket on the statement date for the relevant Account.
Cash Movements	Total amount of cash credits and debits to the account on the statement date.	The total movements in the Cash Movements Inventory Bucket on the statement date for the relevant Account.
Closing Balance	The ending cash balance of the Account at the end of day on the statement date. This will equal the Opening Balance plus the balance impact of the Commissions, Fees, Realized PL, Premium and Cash Movements which occurred on the statement date (and additionally Daily Variation Margin Change for RealizedVM Mode).	The sum of the Closing Balances of the Commissions, Fees, Future PL, Option Premium, Option Cash Settlement and Cash Movements inventory buckets from the Inventory Position Report for the relevant Account and Reg Category on the statement date (and additionally Daily Variation Margin Change for RealizedVM Mode).
		This could be defined as a composite Inventory Bucket called "Closing"
Variation Margin (OTE)	The total unrealized (MTM) PL of the open future and future-style options positions in the account, valued using the exchange closing prices on the statement date.	<b>RealizedVM Mode:</b> The Closing balance of the NPV Inventory bucket on the statement date for the relevant account.
		<b>OTE Mode:</b> The Closing balance of the OTE Inventory bucket on the statement date for the relevant account
Net Option Value	The total value of the open premium-paid option positions in the account, valued using the exchange closing prices on the statement date.	The Closing balance of the NOV Inventory bucket on the statement date for the relevant account = Balance SOV + LOV - (SOV_REV + LOV_REV)
Row Label	Description	Source Data
------------------------------------	--	---
Account Liquidating Value	The total value of the account if all positions were liquidated at the closing prices on the statement date.	<b>RealizedVM Mode:</b> The sum of the Closing Balance and NOV inventory buckets from the Inventory Position Report for the relevant Account on the statement date.
		<b>OTE Mode:</b> The sum of the Closing Balance, OTE and NOV inventory buckets from the Inventory Position Report for the relevant Account on the statement date.
		This could be defined as a composite Inventory Bucket called "Liquidation Value".
Initial Margin	The total Maintenance Margin Requirement, including the impact of NOV and any FCM markups for the account.	The sum of the MARGIN_CALL pricer measure across all Collateral Exposures in the Liability Contract of the account. The included Collateral Exposures will have a Type of "Initial Margin" on the product.
Securities on Deposit	The total value of all non-cash collateral allocated to the relevant account including FCM defined haircuts	The total "All-In Value" in the currency of the securities across both the Deposit and Liability Contracts for this account.
Daily Initial Margin Change	The daily difference in Initial Margin from the previous day.	The difference between Initial Margin & Initial Margin (Previous Day)
Daily Variation Margin Change	The daily difference in Variation Margin from the previous day.	RealizedM Mode: The difference between Inventory Buckets Balance NPV and NPV_REV, sum of NPVFUT, NPVOPT and their reversal
		<b>OTE Mode:</b> The difference between Inventory Buckets Balance OTE and OTE_REV, sum of OTEFUT, OTEOPT and their reversal
FX Conversion to Base currency	The FX rate used to convert the balances in the relevant Reg Category into the statement currency.	The quote for the FX currency pair comprised of the statement currency, taken from the statement pricing environment.
Converted Net Liquidating Value	The Account Liquidation Value converted into the statement currency using the FX Rate above.	The Account Liquidation Value amount converted into the statement currency using the FX Conversion Rate, and standard logic for currency conversion.

# 12.4 Clearing Static Data Dashboard

The Clearing Static Data Dashboard (menu action clearing.ClearingDashboard) allows viewing information about Clients and Counterparties, their associated accounts and collateral configuration, and statements. It also allows viewing listed derivatives products and the LE information of the Exchanges and Clearinghouses configured in the system.

Z Calypso Clearing - ETDMARk	K	
CALYPSO <sup>®</sup> Cleari	ing	Mark Stugart EU FCM 🚽 Jun 15, 2016 🚦
Cliente & Counterparties		
Cilents & Counterparties Pro	oduct Data    Exchanges & Cle	aring Houses
	Client	
🕆 🇾 Clients	Entity Name	EU CLIENT 1 🔍
🕆 📑 EU CLIENT 1	Long Name	EU CLIENT 1
🖺 CL1-001	Status	Enabled
FILENT 2	Active	Active
→ 🗾 EU CLIENT 3	External Ref	none
▼ 5 Counterparties	Holidays	[PAR]
F CARRY BROKER	Comment	none
► 🗾 EUREX CLEARING	Contacts	Type Name Address Country Phone Email Default Client One FRANCE
	Attributes	none
	Account	
		2
	Account Name	CL1-001 🗳
	Type	Standard Account
	External Name	none
	Status	
	Active Range	none
	Base Currency	EUR
	Activity	Speculator
	Origin	Client
	Risk Netting	Net
	Collateral	
	Asset Contract	El Client 1 Assets ①
	Requirement Contract	FUClient 1 liabilities 🕲
	in the contract	
	Statements	0
	Frequency Daily	Official Statements Jun 14, 2016   Preview Latest Activity

On the left-hand side, you can navigate the accounts. LE, Account and Collateral Contract details are displayed on the right-hand side. From each section, you can drill-down to more details.

You can view the future and option contracts in the "Product Data" tab of the dashboard

You can view static data associated to Exchanges and Clearinghouses in the "Exchanges & Clearinghouses" tab

#### Statements Section

From the Statements section, ad-hoc statements can be generated at any time and official statements can be viewed. To execute either of these actions, choose an account from the panel on the left-hand side of the dashboard with a valid statement configuration. The dropdown on the left holds the last 10 official statements which can be selected by the statement date. By default, the most recent statement date will be populated.

Clicking "Preview Latest Activity" will generate an ad hoc statement that is not saved in the system, but can be viewed to get an advanced look at what the statement would look like if generated with the system in its current state.

# **Section 13. Listed Derivatives Contracts**

From the Calypso Navigator, navigate to **Configuration > Listed Derivatives > Future Contracts** (menu action refdata.FutureDefinitionWindow) for creating future contracts, and future products.

From the Calypso Navigator, navigate to **Configuration > Listed Derivatives > Future Option Contracts** (menu action refdata.FutureOptionDefinitionWindow) for creating future option contracts, and future option products.

From the Calypso Navigator, navigate to Configuration > Listed Derivatives > Option Contracts (menu action refdata.ETOContractWindow) for creating ETO contracts, and ETO products.

You can also access contract information from the **Clearing Dashboard > Product Data** tab.

### 13.1 Contract Attributes

To be included in the 3 type domain names:

#### FutureContractAttributes FutureOptionContractAttributes ETOContractAttributes

The following contract attributes are used for processing future and options:

Attribute Name	Purpose/Impact
CascadeFrom	After the creation of the shorter-duration contracts, this attribute will reference the 'ContractName' of the longer-duration contract the contract cascading from. Since there can be a "one to many" ratio of the longer to the shorter duration contracts, it makes sense to place the reference on the latter.
	Note that in the case that a quarterly product is created from the cascading of an annual contract, and will cascade itself into a monthly contract, that quarterly contract would reference the annual contract in the 'CascadeFrom' attribute, while the monthly contract would reference the quarterly contract name. <i>Mandatory</i>
ClearingExchangeTicker	Provides the market standard contract symbol used by the exchange and trade interface.
CascadeTo	In the cascading process, this is an attribute stored on a long duration contract that references the shorter duration contract that will get cascaded to. <i>Mandatory</i>
ContractStrategyMargin	A specific margin strategy stored on unique contracts that differ from the contract's exchange margin methodology. <i>Mandatory for unique contracts.</i>
CascadePriceType	For longer duration contracts, this attribute dictates how the prices of the trades created during the cascade process will be set. When the attribute is set to 'Closing', the trade price of the close out trade and the newly generated opening trade in the shorter duration product(s) will be set to the closing price of the parent product on the cascade date. This price is taken from the Instance Type (Close, Last, etc.) set in the Quote Set from the Pricing Environment selected on the Scheduled Task.

Attribute Name	Purpose/Impact
	When the attribute is set to 'Trade', the trade price of the close out trade and the newly generated opening trade in the shorter duration product(s) will be set to the traded price of the parent trades that form the open position. This implies that the cascade process could generate multiple trades in the same product with different traded prices. If this field is empty or has an unrecognizable value, the process will run with
	a default value of `Irade'.
CascadeDateLag	A positive integer value that represents the number of business days, according to the calendar in the 'Holidays' field on the contract, prior to the product's First Delivery Date that the cascading event will occur. The business days will be according to the calendar set on the Contract definition. An empty value in this field will be considered a lag of zero by default.
ContractCode	Populated by FOW. The short name code for the contract.
ContractLongName	Populated by the FOW. Contract's full name as listed by the FOW. Optional
ContractStrategyRate	When calculating Initial Margin for a position in this contract using the 'Strategy' method, this attribute will set the IM requirement amount per lot in the contract settlement currency. If the attribute is empty, we will use the default value of 1,000.
CabinetPrice	Lowest tradeable value for a specific option contract. Only is used to close out option positions that are very deep out of the money. <i>Optional</i>
SettlementDateLag	Number of business days, according to the calendar(s) in the Holidays field of the contract, after the expiration date that the future or option settles.
ProductMarginCode	Identifies the contract symbol used in the risk array files when calculating Initial Margin. Required when the symbol used in the risk file is different than the ClearingExchangeSymbol.
PremiumPaymentConvention	When PremiumPaymentConvention = VariationMargined, Premium flows are only generated when the optoin is closed out, not at the opening of the position
	When PremiumPaymentConvention = Conventional or not set, the liquidation generates PREMIUM with each transaction, settled on the cleared date

Please refer to Calypso Futures and Future Options Trading documentation for details on setting up future and future option contracts.

Please refer to Calypso Equity Derivatives Trading documentation for details on setting up ETO contracts.

### 13.2 Flex Options

Exchanges such as Eurex offer "Flex" future and option contracts which allow members to submit specifications for bespoke products to be traded on the exchange and cleared on the clearinghouse. These contracts need to adhere to the general guidelines of the contract framework – contract size, underlying asset, contract symbol – but the parties involved in the trade are able to choose their own 'flexible' expiration date, delivery type (physical/cash) and exercise type (American/European). Importantly, this means that it is a valid use case to have a single ETO or future option contract with multiple expires in the same month.

To defined Flex Options, you need to set the Contract Date Format to 'Daily', triggering the display of the contract date in the trade capture screen and the generation of the quote name to include the day, month and year when describing the product.

The user also has to set the formatting of the contract date in the trade capture screen by populating the "DateFormat" contract attribute with a java-compatible format value. Recommended approach is to use the value of "dd MMM yyyy".

### 13.3 Import

Listed Derivatives Contracts can be imported using the FOW Trade Data interface through the scheduled task FOW\_REFERENCE\_DATA\_IMPORT.

Please refer to the *Calypso FOW Integration Guide* for complete details.

[IMPORTANT NOTE: Once the contracts are created, you need to generate the actual products that will be traded]

# **Section 14. Cascading Process**

Important: In order to properly execute the cascading process, we require that the shorter-duration contracts are created in the database and the underlying futures are saved as products prior to the execution of the cascading process.

### 14.1 Triggering the Cascade Process

The cascade process will be run each day through the execution of a scheduled task called FUTURE\_CASCADE. This task should be run at EOD after all offsetting is run, but before IM and VM calculation and statements are generated. Products which are eligible for cascading are determined by the list of values of the CascadeFrom attribute across all contracts. The cascade process will be triggered only on the open positions in these products where the First Delivery Date adjusted by the CascadeDateLag and the ST process date are equal.

The cascading process only needs to be applied to open positions in cascading products. If transactions in a cascading contract have been cleared, and have since all been closed out, the cascading process does not need to be triggered.

Although it is not expected, this task can be run backdated. If the cascade process has already been run, by definition all positions will be closed, so there will be no impact of running it on a date for which it has already been run.

🔀 Scheduled Task De	finition										
Scheduled Task [	Definition										
Use the dialog belo	Use the dialog below to define the attributes for the task to be executed. These attributes will control the behavior of the task. There										
are two types of attributes, general attributes which are the same across all tasks and task specific attributes. Scheduling of the task is performed using the Task Trigger Definition dialog											
Task Description	Task Description										
Task Type: FUTURE_CASCADE											
External Reference:	Future Cascade Process										
Comments:											
Description:											
Execution Parameters											
Attempts: 1	Retry After: 0 minutes	s Expected Execution Time (SLA): minutes									
JVM Settings: -Xms5	12m -Xmx1024m -XX:MaxPermSize=256	m									
Log Settings:											
Task Notification Ontions											
Send Emails	Publish Business Events To User:	<b>•</b>									
Common Attribute	5										
Task ID											
Processing Org		EXANE CLEARING									
Trade Filter											
Filter Set											
Pricing Environment		default									
Timezone		America/Los_Angeles									
Valuation Time Hour											
Valuation Time Minute											
Undo Time Hour											
Undo Time Minute											
Valuation Date Offset	t										
From Days											
To Days											
Pricer Measures											
Business Holidays											
Task Attributes											
Exchange		EUREX									
Pricer Measures Please note, this attribut specific attributes below.	e is a generic attribute available on all ta	asks and may or may not be applicable to this task and may be overwritten by task									
		🔚 Save 🛛 😣 Cancel									

Attribute Name	Purpose/Impact
Processing Org	Processing Org in order to indicate which entities positions should be considered
Pricing Environment	Pricing Environment to source the closing price of the cascaded contract
Exchange	Exchange Attribute field which can be used to select one, several or all exchanges on which to run the process. This will be useful to run the process in a "follow the sun" mode. The pick list should be limited to LE's with a Role of 'MarketPlace'

## 14.2 Results of the Cascade Process

Running the cascade scheduled task on a day when open positions exist in a product which is linked to one or more other contracts by their CascadeFrom attribute will result in 1) the close out of the open position at either the closing price that day or the original trade price and 2) the generation of open positions in all of the existing products on the contracts which were pointing to the original position. If a contract exists, but the underlying future products have not been saved, new positions will not be generated.

# **Section 15. Trade Merge Process**

Merging is when the user wishes to combine numerous trades where the key elements are identical into a single trade, there are a number of reasons why they do this e.g. many fills of a large order come down the cleared trade interface so they want to re-form the order, so statement just shows the single merged trade.

For example

Contract	IFLL I (Future)
Contract Value	10.00

Executions										
Product	B/S	Qty	Price	Trade Value						
IFLL I SEP15	В	11	99.90	10,989.00						
IFLL I SEP15	В	12	99.90	11,988.00						
IFLL I SEP15	В	9	99.90	8,991.00						
		32	99.90	31,968.00						

Trade booking - before merge										
Product	B/S	Qty	Price	Trade Value	Account					
IFLL I SEP15	В	11	99.90	10,989.00	ACT1					
IFLL I SEP15	В	12	99.90	11,988.00	ACT1					
IFLL I SEP15	В	9	99.90	8,991.00	ACT1					

Trade booking - after merge       Product     B/S     Qty     Price     Trade Value     Account									
Product	B/S	Qty	Price	Trade Value	Account				
IFLL I SEP15	В	32	99.90	31,968.00	ACT1				

\* final merged trade that shows on the client statement and back-office reports

### 15.1 Merging trade eligibility

Trades can only be merged that

- 1. Top-day (booking date = trade date)
- 2. Fully open (no liquidations have been performed on them)

- 3. Same Position Aggregation (ClientAccount, CounterPartyAccount, Position)
- 4. All buys (long) or all sells (short)
- 5. ServiceLevel match e.g. do not allow Full Service and Cleared Only trades to match
- 6. Order Taker and Executing Broker match
- 7. Trade hasn't already been merged

### 15.2 Selecting trades to Merge

In the Trade Browser and Trade Open Quantity reports the user needs to select more than one trade that are eligible for merging (see Merging trade eligibility).

Right-click > Process > ETD Merge/Split > Merge...

	🔏 Trade Browser / Trade	Browser											
ſ	Report Data View Exp	oort Marke	et Data Process Utilities Help										
	📑 Criteria												
	Trade Id Client Account	Ctpty Acct	Product Description			Buy/Sell	Quantity	Price /	Entered Date	Trad	de Date	Settle Date	Curr
	46401 ABC STD 001	EUREX A1	ETOEquity/UHRN/EUREX/CALL/80/SVN0/	17/0	06/2016	Sell	(1.00)	5.8500000	20/06/2016	18/0	4/2016	18/04/2016	CHF
	46509 ABC STD 001	CB CLIENT	FutureMM/LIFFE5/21/12/2016		Action		(17.00)	99.10	24/06/2016	20/0	4/2016	20/04/2016	GBP
	46510 ABC STD 001 46464 ABC STD 001	CB CLIENT	FutureMM/LIFFE5/21/12/2016 FutureMM/LIFFE5/17/08/2016		Show	•	(25.00)	99.45	21/06/2016	12/0	4/2016	20/04/2016	GBP
	46463 ABC STD 001 46467 ABC STD 001	CB CLIENT	FutureMM/LIFFE5/17/08/2016 FutureMM/LIFFE5/20/04/2016		Process	5 *	Add Ger	eric Comm	ent	12/3	14/2016 14/2016	12/04/2016 20/04/2016	GBP GBP
	46468 ABC STD 001 46456 DEE STD 003	CB CLIENT	FutureMM/LIFFE5/20/04/2016 FutureMM/LIFFE5/21/12/2016	-	Config		Cancel L	atest Gener	ic Comments	2	4/2016	20/04/2016	GBP
	46459 DEF STD 003	CB CLIENT	FutureMM/LIFFE5/21/12/2016	-	comg	Jen	Curicer Li	ic in	ic comments	1	4/2016	19/04/2016	GRP
	46433 ABC STD 001	CB CLIENT	FutureBond/CBOT13/18/06/2016			Sell	EID Mer	ge/Split	20/00/2010	*  *-7	Mer	ge	)
											Rev	ert Merge	
											Spli	t	
											Rev	ert Split	

Merge confirmation screen will appear where the user needs to select:

Fee Processing Mode – these two modes can produce different results when the underlying fee configurations use 'Volume based tiered calculations'

Client; for all fees where the Legal Entity has role = Client

- Recalculate = recalculate fees for the new merged quantity
- Copy = take original trades calculated fees, sum each Fee Type and apply to the new merged trade

Counterparty; for all fees where the Legal Entity has role <> Client e.g. Counterparty

- Recalculate = recalculate fees for the new merged quantity
- Copy = take original trades calculated fees, sum each Fee Type and apply to the new merged trade

Confirmation if merging same priced trades or different prices that will be averaged

- Merge same price trades
- Merge and average price



Once the Merge has been confirmed, screen will explain the actions with the Trade Ids

- Total Quantity of the trades to be merged
- Cancel these trades
- New trade generated with new Total Quantity



On 'Close' the Trade Browser, Trade Open Quantity reports will auto refresh to display the newly merged trade

	🛃 Trade '	Browser / Trade	e Browser								
	Report	Data View Ex	port Mark	et Data Process Utilities Help							
		3									
🖙 Criteria											
	Trade Id	Client Account	Ctpty Acct	Product Description	Buy/Sell	Quantity	Price Entered Dat	e Trade Date	Settle Date	Currency	TradeStatus
	46464	ABC STD 001	CB CLIENT	FutureMM/LIFFE5/17/08/2016	Sell	(25.00)	99.45 21/06/2016	12/04/2016	12/04/2016	GBP	VERIFIED
	46459	ABC STD 003	CB CLIENT	FutureMM/LIFFE5/21/12/2016	Sell	(40.00)	99.90/21/06/2016	20/04/2016	20/04/2016	GBP	VERIFIED
	46401	ABC STD 001	EUREX A1	ETOEquity/UHRN/EUREX/CALL/80/SVN0/17/06/2016	Sell	(1.00)	5.8500000 20/06/2016	18/04/2016	18/04/2016	CHF	VERIFIED

#### 15.3 Merge and Average Price

For selected trades with different trade prices and the 'Merge and average price' option selected.

The system will calculate the weighted average price.

For example

	Client	Counter-						
Trade Date	Acct	party Acct	Ссу	Exchange	Contract	Expiry	Qty	Trade Price

20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-95	166.320000
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-100	166.320000
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-100	166.320000
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-68	166.320000
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-32	166.310000
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-14	166.310000
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-86	166.320000
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-100	166.320000
Total Quantity							-595	
	Client	Counter-						
Trade Date	Account	party Acct	Ссу	Exchange	Contract	Expiry	Qty	Trade Price
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-595	166.31922

Total Quantity

### 15.4 Revert Merge

In the Trade Browser and Trade Open Quantity reports the user can revert a previously performed merge (only allowed on same business day).

-595

Right-click > Process > ETD Merge/Split > Revert Merge...

Z Trade Browser / Trade Browser					-					-
Report Data View Export Market Data Process Utilities Help										
3 Criteria										
Trade Id Client Account Ctpty Acct Product Description		Buy/Sell	Qu	antity	Price	Entered Date	Trade Date	Settle Date	Currency	TradeStatu
46464 ABC STD 001 CB CLIENT FutureMM/LIFFE5/17/08/2016 46459 DEF STD 003 CB CLIENT FutureMM/LIFFE5/21/12/2016	- 2	Sell		(25.00 (40.00	99.4 99.9	521/06/2016	12/04/2016 19/04/2016	12/04/2016	GBP GBP	VERIFIED
46401/48C STD 001 CB CLENT 000789M/LTFES/21/22/01L/80/SVN0/17/06/2	20	Action	•	1.00	5.850000	0 20/06/2016	18/04/2016	18/04/2016	CHF	VERIFIED
46463/ABC STD 001 CB CLENT FutureMM/LIFFE5/17/08/2016	1	Show		5.00	99.5	021/06/2016	12/04/2016	12/04/2016	GBP	VERIFIED
46433.48C STD 001 CB CLIENT FutureMM/LIFES/20/04/2016 46433.48C STD 001 CB CLIENT FutureBond/CBOT13/18/06/2016		Process	•	1	Add Generic Comment			19/04/2016 GBP	USD	VERIFIED
46410 ABC STD 001 EUREX A1 FutureBond/EUREX35/08/09/2016 46456 DEF STD 003 CB CLIENT FutureMM/LIFFE5/21/12/2016	<b>6</b> 1	Configur	e•	(	Cancel Late	est Generic Cor	nments	18/04/2016 19/04/2016	EUR GBP	VERIFIED
				E	TD Merge	/Split	÷	Merge		
								Revert N	lerge	
								Split		
								Revert S	plit	

Once the Revert Merge has been confirmed, screen will explain the actions with the Trade Ids

- Cancel the merged trade
- Book as New the original trades

Revert Merge
ETD Clearing Trade Revert Merge utility
Click on Revert Merge to execute. Trades will be filtered before merge/split/average, in order to meet standard criteria, such as not being part of an existing liquidation, or being top day trades
Initialized, filtered/accumulated trade count: 1 Processing merge trades to cancel Loading cancelled trades for restoring
Loaded 3 cancelled trades Process date: 20/04/2016 Cancelled trades: [46512]
New trades: [46515, 46514, 46513]
Success
Revert Merge Close

On 'Close' the Trade Browser / Trade Open Quantity reports will auto refresh to display the original 'un-merged' trades

🔀 Trade	Z Trade Browser / Trade Browser										
Report	Report Data View Export Market Data Process Utilities Help										
📑 Criter	ia										
Trade Id	Client Account	Ctpty Acct	Product Description	Buy/Sell	Quantity	Price /	Entered Date	Trade Date	Settle Date	Currency	TradeState
4640	1 ABC STD 001	EUREX A1	ETOEquity/UHRN/EUREX/CALL/80/SVN0/17/06/2016	Sell	(1.00)	5.8500000	20/06/2016	18/04/2016	18/04/2016	CHF	VERIFIED
4651	.5 ABC STD 001	CB CLIENT	FutureMM/LIFFE5/21/12/2016	Sell	(10.00)	99.10	24/06/2016	20/04/2016	20/04/2016	GBP	VERIFIED
4651	3 ABC STD 001	CB CLIENT	FutureMM/LIFFE5/21/12/2016	Sell	(6.00)	99.10	24/06/2016	20/04/2016	20/04/2016	GBP	VERIFIED
4651	4 ABC STD 001	CB CLIENT	FutureMM/LIFFE5/21/12/2016	Sell	(17.00)	99.10	24/06/2016	20/04/2016	20/04/2016	GBP	VERIFIED
4646	4 ABC STD 001	CB CLIENT	FutureMM/LIFFE5/17/08/2016	Sell	(25.00)	99.45	21/06/2016	12/04/2016	12/04/2016	GBP	VERIFIED
4646	3 ABC STD 001	CB CLIENT	FutureMM/LIFFE5/17/08/2016	Sell	(15.00)	99.50	21/06/2016	12/04/2016	12/04/2016	GBP	VERIFIED

## 15.5 Merge Schedule Task

Merging can be performed as a Scheduled Task.

Trade selection is controlled by a standard Trade Filter

Task Attribute:

- Client Fee processing mode (Recalculate or Copy)
- Counterparty Fee processing mode (Recalculate or Copy)
- Merge Behaviour (Merge same price trades or Merge and average price)

ETD\_TRADE\_MERGE Scheduled Task definition

Scheduled Task De	finition										
Use the dialog below	to define the attributes for t	the task to be	e executed. These attributes will	control the behavior of the task. The							
the same across all ta	asks and task specific attribut	tes. Schedul	ling of the task is performed using	g the Task Trigger Definition dialog							
Task Description											
Task Type: ETD_TRADE_MERGE											
External Reference: ETD_TRADE_MERGE											
Comments: E	TD_TRADE_MERGE										
Description: E	TD_TRADE_MERGE										
- Forentian Demonstra											
Execution Parameters		1									
Attempts: 1	Retry After: 0	minutes	Expected Execution Time (SLA):	5 minutes							
JVM Settings: -Xms512	m -Xmx1024m -XX:MaxPermS	Size=256m									
Log Settings:											
			Task Notification Options								
Task Notification Options											
Task Notification Options	Publish Business Events T	To User:	<b>_</b>								
Task Notification Options	Publish Business Events T	To User:	•								
Task Notification Options	Publish Business Events T	To User:	•								
Task Notification Options	Publish Business Events T	To User:	•	7001							
Task Notification Options Send Emails Common Attributes Task ID Processing Org	Publish Business Events T	To User:	•	7001							
Task Notification Options Send Emails Common Attributes Task ID Processing Org Trade Filter	Publish Business Events T	To User:	•	7001 Cleared Positions							
Task Notification Options Send Emails Common Attributes Task ID Processing Org Trade Filter Filter Set	Publish Business Events T	To User:	•	7001 Cleared Positions							
Task Notification Options Send Emails Common Attributes Task ID Processing Org Trade Filter Filter Set Pricing Environment	Publish Business Events T	To User:	•	7901 Cleared Positions default							
Task Notification Options Send Emails Common Attributes Task ID Processing Org Trade Filter Filter Set Pricing Environment Timezone	Publish Business Events T	To User:	•	7001 Cleared Positions default Europe/London							
Task Notification Options Send Emails Common Attributes Task ID Processing Org Trade Filter Filter Set Pricing Environment Timezone Valuation Time Hour	Publish Business Events T	To User:	•	7001 Cleared Positions default Europe/London 22							
Task Notification Options Send Emails Common Attributes Task ID Processing Org Trade Filter Filter Set Pricing Environment Timezone Valuation Time Hour Valuation Time Minute	Publish Business Events T	To User:	•	7001 Cleared Positions default Europe/London 22 0							
Task Notification Options Send Emails Common Attributes Task ID Processing Org Trade Filter Filter Set Pricing Environment Timezone Valuation Time Hour Valuation Time Hour Valuation Time Minute Undo Time Minute Undo Time Minute	Publish Business Events T	To User:	•	7001 Cleared Positions default Europe/London 22 0							
Task Notification Options Send Emails Common Attributes Task ID Processing Org Trade Filter Filter Set Pricing Environment Timezone Valuation Time Hour Valuation Time Hour Undo Time Minute Undo Time Minute Valuation Date Offend	Publish Business Events T	To User:	•	7001 Cleared Positions default Europe/London 22 0							
Task Notification Options Send Emails Common Attributes Task ID Processing Org Trade Filter Filter Set Pricing Environment Timezone Valuation Time Hour Valuation Time Hour Undo Time Hour Undo Time Minute Valuation Date Offset Erem Dave	Publish Business Events T	To User:	•	7001 Cleared Positions default Europe/London 22 0							
Task Notification Options Send Emails Common Attributes Task ID Processing Org Trade Filter Filter Set Pricing Environment Timezone Valuation Time Hour Valuation Time Hour Undo Time Hour Undo Time Minute Valuation Date Offset From Days To Days	Publish Business Events T	To User:		7001 Cleared Positions default Europe/London 22 0							
Task Notification Options Send Emails Common Attributes Task ID Processing Org Trade Filter Filter Set Pricing Environment Timezone Valuation Time Hour Valuation Time Hour Undo Time Hour Undo Time Minute Valuation Date Offset From Days To Days Pricer Measures	Publish Business Events T	To User:		7001 Cleared Positions default Europe/London 22 0							
Task Notification Options Send Emails Common Attributes Task ID Processing Org Trade Filter Filter Set Pricing Environment Timezone Valuation Time Hour Valuation Time Hour Undo Time Hour Undo Time Hour Undo Time Minute Valuation Date Offset From Days To Days Pricer Measures Businese Holdavs	Publish Business Events T	To User:		7001 Cleared Positions default Europe/London 22 0							
Task Notification Options Send Emails Common Attributes Task ID Processing Org Trade Filter Filter Set Pricing Environment Timezone Valuation Time Hour Valuation Time Minute Undo Time Minute Undo Time Minute Valuation Date Offset From Days To Days Pricer Measures Business Holidays Task Attributes	Publish Business Events T	To User:		7001 Cleared Positions default Europe/London 22 0							
Task Notification Options Send Emails Common Attributes Task 1D Processing Org Trade Filter Filter Set Pricing Environment Timezone Valuation Time Hour Valuation Time Hour Undo Time Hour Undo Time Minute Valuation Date Offset From Days To Days Pricer Measures Business Holidays Task Attributes Client Fee Procession M	Publish Business Events T	To User:		7001 Cleared Positions default Europe/London 22 0							
Task Notification Options Send Emails Common Attributes Task ID Processing Org Trade Filter Filter Set Pricing Environment Timezone Valuation Time Hour Valuation Time Hour Undo Time Hour Undo Time Minute Undo Time Minute Valuation Date Offset From Days To Days Pricer Measures Business Holidays Task Attributes Client Fee Processing M CounterParty Fee Proce	Publish Business Events T	To User:		7001 Cleared Positions default Europe/London 22 0							

This Schedule Task for valuation date=today (e.g. 04-07-2016) should perform the exact same merges as in a Trade Browser set with the same Trade Filter

Trade Start = 04-07-2016

Trade End = 04-07-2016

Trade Filter = Cleared Positions (matching the Scheduled Task's trade filter)

With all trades selected and Merge + Fee processing mode=Recalculate selected

e.g.
Trad

ZTrade Browser / Trade Browser													
Report Data View Export Market Data Process Utilities Help													
😝 Criteria													
Criteria													
Template Description												🔲 Undo Date	
Trade	St <mark>art</mark>	<mark>04/07/2016</mark>		-	-		E	ind 04/07/2016	-	-		Trade Filter	Cleared Positions
Settle	Start		-	•	¥		E	ind	+ 💌	<b>~</b>		SD Filter	
Process	Start		-	•	-		E	ind	+ 💌	-		Filter Set	
Maturity	Start		-	•	-		E	ind	+ 💌	🔻 🗖 Open		Currency	
Trade Id	ID	-				Bundle			Id 🔻			Product Family	Future,FutureOption,ETO,ETOCommodity
Buy/Sell					-	Max Rows#						Product Type	
CP role: ALL						Books						Product Id	
Processing Org						🔲 Include Ci	hild Legal	Entities				Status	PENDING, PRICING, VERIFIED, ALLOCATED, R

### 15.6 Merge Trade Keywords

New trade keywords have beed introduced for audit and investigation purposes.

Example of merging two trades

Original trades

Trade Id	Quantity	Status	MergeAs	OriginalMergedTrade
0001	100	VERIFED		
0002	300	VERIFED		

After merging

Trade Id	Quantity	Status	MergeAs	OriginalMergedTrade
0001	100	CANCELED	0003	
0002	300	CANCELED	0003	
0003	400	VERIFED		

After reverting the merge

Trade Id	Quantity	Status	MergeAs	OriginalMergedTrade
0001	100	CANCELED	0003	
0002	300	CANCELED	0003	
0003	400	CANCELED		
0004	100	VERIFED		0001
0005	300	VERIFED		0002

### 15.7 Optional keywords to 'copy' from original trades - Merging

keywords2CopyUponMerge Domain Name controls which optional keywords to 'copy' from original trades to the new merged trade.

For example

keywords2CopyUponMerge
 SopenClose
 Sope

Example of merging two trades

#### Original trades

Trade Id	Quantity	Status	OpenClose	OrderId
0001	100	VERIFED	0	12005
0002	300	VERIFED	0	12005

After merging

Trade Id	Quantity	Status	OpenClose	OrderId
0001	100	CANCELED	0	12005
0002	300	CANCELED	0	12005
0003	400	VERIFED	0	12005

# **Section 16. Client Statement**

The scheduled task ACCOUNT\_STATEMENT is used to generate client statements as part of the EOD process.

This section describes the process for generating a daily Client Statement from the Back Office clearing solution as well as information about the content of our supported statement template.

The current version of the Client Statement supports reporting for transactions, offsetting, lifecycle, cash and security movements and account balances based on the state of the system at the end of the processing day. Backdated transactions/activity and account corrections are not currently supported.

### 16.1 Account Configuration

A client clearing account can be configured to generate a statement by adding one or more statement configurations to the "Statement" tab of the account, making sure it gets added and saved with a unique config id.

🔀 Accounts Det	inition - A	uthorization	nmode OFF Clie	nt 1 Erste	Final / 60	024 - version 0 📃 🔳	×
Account Utilit	es Repo	rts Process	Help				
Account Stateme	nts Attribu	tes Interests	Limits Consolida	ation Trans	slation/Re	valuation Clearing Browse	
	Sta	tement Type	Clearing 🔻				dd D
Frequency:	Daily		•				
Position Type:	Actual				•	Up	date
Position Date:	Settle (Fr	ozen)			•	Rer	nove
Active From:			To:			Gen	erate
Message Config:	5307						
	Message Ty	/pe: CLEARIN	G_ETD_STATEME	NT			
	Templ	ate: CalypsoE xpt: UTM	TDStatement.xsl				
	Gatev	vay: FILE					
	.ast Statem	ent:					
Config Id Stater	nent Type	Numbering	Last Statement	Zero Bal	No Mvt	Client Statement Generation	Active F
6025 Clearin	g	_				N/A	
•	111						•
New Delete	Save	SaveAs	New Custon	nerTransfer			Close

The fields in the statement config are described below.

Field Name	Expected Value	Description
Statement Type	"Clearing"	
Frequency	"Daily"	Identifies this statement config as eligible to be run on a daily basis. Does not control the format or content of the output, just the timing.
Position Type	"Actual" "Theoretical"	The field controls how the account balances are displayed in the statement, based on the status of the inventory transfers. Actual is the standard value, but is configurable based on the user's business logic.

Field Name	Expected Value	Description
Position Date	Settle (Frozen)	The field controls how the account balances are displayed in the statement, based on the status of the inventory transfers. It takes into account retro- active movements in the next statement.
Active From/To	Dates	Allows the statement configuration to be active for a set period of time. When the user triggers the statement run for a processing date outside of this range, no statement will be generated.
Message Config	Message Config ID	Select the message configuration which is applicable to the account. The screenshot below shows the setup of the standard message config for the ETD statement.

## 16.2 Message Configuration

Edit Browse			
		7	
Product Type	N/A	Language	English (United Kingdom)
Event Type		Address Type	EMAIL
Message Type		Gateway	FILE
Processing Org	ALL	Format Type	HTML
PO Contact Type	Default 💌	Template	CalypsoETDStatement.xsl
Receiver	ALL	SD Filter	
Receiver Role	Client	Audit Filter	<b>T</b>
Rec Contact Type	Default 💌	]	<b>•</b>
Grouping	· · · · · · · · · · · · · · · · · · ·		Matching     Inactive
		-	Do not Send Message
Config Id	14808 Delete	Save	Save As New

### 16.3 Scheduled Task ACCOUNT\_STATEMENT

Official client statements are generated by running the ACCOUNT\_STATEMENT scheduled task with a message type of 'CLEARING\_ETD\_STATEMENT'. This task checks all of the account statement configurations and generates official statements for valid configurations.

The task must be configured to generate statements for Legal Entities with a role of 'Client' by selecting 'Client' in the ST Role Attribute. Additional filtering can be added in the SD\_FILTER attribute to single out specific accounts or LEs.

The ACCOUNT\_STATEMENT valuation date and time should correspond to be just before the PO's Book EOD time (when comparing both in the same time zone) on the business date for which the statements are being generated.

Task Description					
Task Type:	ACCOUNT_STA	ATEMENT			
External Reference:	QAT Generate	QAT Generate Client Statements			
Comments:	QAT Generate	Client Statemei	nts		
Description:	QAT Generate	QAT Generate Client Statements			
Execution Parameters					
Attempts: 1	Retry Af	ter: 0	minutes	Expected	
JVM Settings: -Xms5	12m -Xm×1024m	-XX:MaxPermS	iize=256m		
Log Settings:					
Task Notification Options					
🔲 Send Emails 🛛	Publish Busine	ss Events 1	To User:		
Common Attribute	25				
Task Attributes					
MESSAGETYPE		CLEARING_ET	ID_STATEM	ENT	
ROLE		Client			
LEGALENTITY					
CURRENCIES					
CHECK_FREQUENCY					
EXCLUDE_ACCOUNT	_STATUS				
Prerequisite Check					
SD_FILTER		ClientAccount	: QAT2		

#### Sample Financial Summary

A sample of the summary layout is shown below, followed by a description of the source for each piece of data.

Reg Code 01 - USD Segreg	ated	Reg Code 03 - Euro 30.7 Sec	cured	Converted Total	
Opening Balance	402,984.23	Opening Balance	2,082.22	Opening Balance	405,285.08
Commissions	(50.50)	Commissions	(20.00)	Commissions	(72.60)
Fees	(230.75)	Fees	(50.00)	Fees	(286.00)
Realized PL	31,308.50	Realized PL	(38,000.00)	Realized PL	(10,681.50)
Premium	(100,391.00)	Premium	0.00	Premium	(100,391.00)
Cash Movements	0.00	Cash Movements	5,000.00	Cash Movements	5,525.00
Closing Balance	333,620.48	Closing Balance	(30,987.78)	Closing Balance	299,378.98
Open Trade Equity	(201,398.42)	Open Trade Equity	95,033.20	Open Trade Equity	(96,386.73)
Total Equity	132,222.06	Total Equity	64,045.42	Total Equity	202,992.25
Net Option Value	234,882.15	Net Option Value	(45,200.00)	Net Option Value	184,936.15
Securities on Deposit	0.00	Securities on Deposit	0.00	Securities on Deposit	0.00
Account Liquidation Value	132,222.06	Account Liquidation Value	64,045.42	Account Liquidation Value	202,992.25
Total Margin Requirement	1,000,000.00	Total Margin Requirement	300,000.00	Total Margin Requirement	1,331,500.00
Margin Excess/Deficit	(867,777.94)	Margin Excess/Deficit	(235,954.58)	Margin Excess/Deficit	(1,128,507.75)
FX Conversion to USD	1	FX Conversion to USD	1.105	FX Conversion to USD	1
Converted Net Liquidating Value	(867,777.94)	Converted Net Liquidating Value	(260,729.81)	Converted Net Liquidating Value	(1,128,507.75)

Each section other than the Converted Total is expected to have values in a single currency that fall under a single Regulatory Code, so there is no FX conversion required other than the conversion of the Net Liquidating Value. The Converted Total section is the sum of the values of each item from all of the individual sections, after each row has been converted into the statement currency using the FX Conversion rate displayed at the bottom of the section.

Row Label	Description	Source Data
Opening Balance	The beginning cash balance of the Account at the start of day on the statement date.	The sum of the Opening Balances of the Commissions, Fees, Future PL, Option Premium, Option Cash Settlement and Cash Movements inventory buckets from the Inventory Position Report for the relevant

Row Label	Description	Source Data
		Account and Reg Category on the statement date.
		This could be defined as a composite Inventory Bucket called "Opening"
Commissions	The total Commissions related to activity in the relevant Reg Category on the statement date.	The total movements in the Commissions Inventory Bucket on the statement date for the relevant Account and Reg Category.
Fees	The total Fees related to activity in the relevant Reg Category on the statement date.	The total movements in the Fees Inventory Bucket on the statement date for the relevant Account and Reg Category.
Realized PL	The total realized cash related to positions in the relevant Reg Category which were closed out on the statement date.	The total movements in the Futures PL and Option Cash Settlement Inventory Buckets on the statement date for the relevant Account and Reg Category.
Premium	The total option premium paid and received in the relevant Reg Category on the statement date.	The total movements in the Option Premium Inventory Bucket on the statement date for the relevant Account and Reg Category.
Cash Movements	Total amount of cash credits and debits to the account in the relevant Reg Category on the statement date.	The total movements in the Commissions Inventory Bucket on the statement date for the relevant Account and Reg Category.
Closing Balance	The ending cash balance of the Account at the end of day on the statement date. This will equal the Opening Balance plus the balance impact of the Commissions, Fees, Realized PL, Premium and Cash Movements which occurred on the statement date.	The sum of the Closing Balances of the Commissions, Fees, Future PL, Option Premium, Option Cash Settlement and Cash Movements inventory buckets from the Inventory Position Report for the relevant Account and Reg Category on the statement date.
		This could be defined as a composite Inventory Bucket called "Closing"
Open Trade Equity	The total unrealized (MTM) PL of the open future and future-style options positions in the account for the relevant Regulatory Category, valued using the exchange closing prices on the statement date.	The Closing balance of the OTE Inventory bucket on the statement date for the relevant account and Reg Category
Open Trade Equity (Discounted)	The total unrealized (MTM) PL of the open forward positions which are discounted back to the statement date since the PL cannot be realized until the expiration of the position.	The Closing balance of the Discounted OTE Inventory bucket on the statement date for the relevant account and Reg Category
Total Equity	The combined value of the Account cash balance and Open Trade Equity for the relevant Reg Category.	The sum of the Closing Balances of the Commissions, Fees, Future PL, Option Premium, Option Cash Settlement, Cash Movements, OTE and Discounted OTE inventory buckets from the Inventory Position Report for the relevant Account and Reg Category on the statement date. This could be defined as a composite Inventory
		Bucket called "Total Equity"

Row Label	Description	Source Data
Net Option Value	The total value of the open premium-paid option positions in the account for the relevant Regulatory Category, valued using the exchange closing prices on the statement date.	The Closing balance of the NOV Inventory bucket on the statement date for the relevant account and Reg Category
Securities on Deposit	The total value of all non-cash collateral allocated to the relevant Reg Category, including FCM defined haircuts	The total "All-In Value" in the currency of the Reg Category of the securities across both the Deposit and Liability Contracts for this account.
Account Liquidation Value	The total value of the account if all positions in the relevant Reg Category were liquidated at the closing prices on the statement date.	The sum of the Closing Balances of the Total Equity and NOV inventory buckets from the Inventory Position Report for the relevant Account and Reg Category on the statement date. This could be defined as a composite Inventory Bucket called "Liquidation Value".
Total Margin Requirement	The total Maintenance Margin Requirement, including the impact of NOV and any FCM markups, for the relevant Reg Category for the account.	The sum of the MARGIN_CALL pricer measure across all Collateral Exposures in the Liability Contract of the account, excluding any Collateral Exposures generated for OTE. The included Collateral Exposures will have a Type of "Initial Margin" on the product.
Margin Excess/Deficit	The difference between the Total Equity and the amount of Maintenance Margin which is greater than the Securities on Deposit. If the securities value is greater than or equal to the MMR, this is equal to the Total Equity.	Equal to the Minimum value of the Total Equity and the Total Equity + Securities on Deposit – Total Margin Requirement
FX Conversion to Base currency	The FX rate used to convert the balances in the relevant Reg Category into the statement currency.	The quote for the FX currency pair comprised of the statement currency and the Reg Category currency, taken from the statement pricing environment. If the Reg Category currency is equal to the statement currency, this value is set to 1.
Converted Net Liquidating Value	The Account Liquidation Value converted into the statement currency using the FX Rate above. The Account Liquidation Value converted into the statement of the FX Conversion Rate, and structurency conversion.	

#### 16.4 Clearing Static Data Dashboard

The Clearing Static Data Dashboard (menu action clearing.ClearingDashboard) allows viewing information about Clients and Counterparties, their associated accounts and collateral configuration, and statements. It also allows viewing listed derivatives products and the LE information of the Exchanges and Clearinghouses configured in the system.

Calypso Clearing - ETDMAR	К	
CALYPSO <sup>®</sup> Clear	ing	Mark Stugart 🛛 <b>EU FCM</b> 🚽 Jun 15, 2016 🧃
Clients & Counternatties	aduct Data Exchanges & Cl	aging Houses
O_ Filter Accounts		earing mouses
	Client	
Clients	Entity Name	EU CLIENT 1 🔍
T EU CLIENT 1	Long Name	EU CLIENT 1
E CL1-001	Status	Enabled
Figure 1 CLIENT 2	Active	Active
EU CLIENT 3	External Ref	none
🚽 Counterparties	Holidays	[YAK] 
EXAMPLE CARRY BROKER	comment	<i>none</i> Type Name Address Country Phone Email
EUREX CLEARING	Contacts	Default Client One FRANCE
	Attributes	none
	Account	
	Account Name	CL1-001 🔍
	Туре	Standard Account
	External Name	none
	Description	EU Client 1 Clearing Account
	Status	Active
	Active Range	none
	Base Currency	EUR
	Activity	Speculator
	Origin	Client
	Risk Netting	Net
	Collateral	
	Asset Contract	EU Client 1 Assets
	Requirement Contract	EU Client 1 Liabilities
	Statements	(
	Frequency Daily	Official Statements Jun 14, 2016   Preview Latest Activity

On the left-hand side, you can navigate the accounts. LE, Account and Collateral Contract details are displayed on the right-hand side. From each section, you can drill-down to more details.

You can view the future and option contracts in the "Product Data" tab of the dashboard

You can view static data associated to Exchanges and Clearinghouses in the "Exchanges & Clearinghouses" tab.

#### Statements Section

From the Statements section, ad-hoc statements can be generated at any time and official statements can be viewed. To execute either of these actions, choose an account from the panel on the left-hand side of the dashboard with a valid statement configuration. The dropdown on the left holds the last 10 official statements which can be selected by the statement date. By default, the most recent statement date will be populated.

Clicking "Preview Latest Activity" will generate an ad hoc statement that is not saved in the system, but can be viewed to get an advanced look at what the statement would look like if generated with the system in its current state.

# **Section 17. Listed Derivatives Contracts**

From the Calypso Navigator, navigate to Configuration > Listed Derivatives > Future Contracts (menu action refdata.FutureDefinitionWindow) for creating future contracts, and future products.

From the Calypso Navigator, navigate to **Configuration > Listed Derivatives > Future Option Contracts** (menu action refdata.FutureOptionDefinitionWindow) for creating future option contracts, and future option products.

From the Calypso Navigator, navigate to Configuration > Listed Derivatives > Option Contracts (menu action refdata.ETOContractWindow) for creating ETO contracts, and ETO products.

You can also access contract information from the **Clearing Dashboard > Product Data** tab.

### 17.1 Contract Attributes

To be included in the 3 type domain names:

- FutureContractAttributes
- FutureOptionContractAttributes
- ETOContractAttributes

The following contract attributes are used for processing future and options:

Attribute Name	Purpose/Impact	
CascadeFrom	After the creation of the shorter-duration contracts, this attribute will reference the 'ContractName' of the longer-duration contract the contract cascading from. Since there can be a "one to many" ratio of the longer to the shorter duration contracts, it makes sense to place the reference on the latter.	
	Note that in the case that a quarterly product is created from the cascading of an annual contract, and will cascade itself into a monthly contract, that quarterly contract would reference the annual contract in the 'CascadeFrom' attribute, while the monthly contract would reference the quarterly contract name. <i>Mandatory</i>	
ClearingExchangeTicker	Provides the market standard contract symbol used by the exchange and trade interface.	
CascadeTo	In the cascading process, this is an attribute stored on a long duration contract that references the shorter duration contract that will get cascaded to. <i>Mandatory</i>	
ContractStrategyMargin	A specific margin strategy stored on unique contracts that differ from the contract's exchange margin methodology. <i>Mandatory for unique contracts.</i>	
CascadePriceType	For longer duration contracts, this attribute dictates how the prices of the trades created during the cascade process will be set.	
	When the attribute is set to 'Closing', the trade price of the close out trade and the newly generated opening trade in the shorter duration product(s) will be set to the closing price of the parent product on the cascade date. This price is taken from the Instance Type (Close, Last, etc.) set in the Quote Set from the Pricing Environment selected on the Scheduled Task.	
	When the attribute is set to 'Trade', the trade price of the close out trade and the newly generated opening trade in the shorter duration product(s) will be set to the traded price	

E

Attribute Name	Purpose/Impact
	of the parent trades that form the open position. This implies that the cascade process could generate multiple trades in the same product with different traded prices.
	If this field is empty or has an unrecognizable value, the process will run with a default value of 'Trade'.
CascadeDateLag	A positive integer value that represents the number of business days, according to the calendar in the 'Holidays' field on the contract, prior to the product's First Delivery Date that the cascading event will occur. The business days will be according to the calendar set on the Contract definition. An empty value in this field will be considered a lag of zero by default.
ContractCode	Populated by FOW. The short name code for the contract.
ContractLongName	Populated by the FOW. Contract's full name as listed by the FOW. Optional
ContractStrategyRate	When calculating Initial Margin for a position in this contract using the 'Strategy' method, this attribute will set the IM requirement amount per lot in the contract settlement currency. If the attribute is empty, we will use the default value of 1,000.
CabinetPrice	Lowest tradeable value for a specific option contract. Only is used to close out option positions that are very deep out of the money. <i>Optional</i>
SettlementDateLag	Number of business days, according to the calendar(s) in the Holidays field of the contract, after the expiration date that the future or option settles.
ProductMarginCode	Identifies the contract symbol used in the risk array files when calculating Initial Margin. Required when the symbol used in the risk file is different than the ClearingExchangeSymbol.
PremiumPaymentConvention	When PremiumPaymentConvention = VariationMargined, Premium flows are only generated when the optoin is closed out, not at the opening of the position
	When PremiumPaymentConvention = Conventional or not set, the liquidation generates PREMIUM with each transaction, settled on the cleared date

Please refer to Calypso Futures and Future Options Trading documentation for details on setting up future and future option contracts.

Please refer to Calypso Equity Derivatives Trading documentation for details on setting up ETO contracts.

### 17.2 Flex Options

Exchanges such as Eurex offer "Flex" future and option contracts which allow members to submit specifications for bespoke products to be traded on the exchange and cleared on the clearinghouse. These contracts need to adhere to the general guidelines of the contract framework – contract size, underlying asset, contract symbol – but the parties involved in the trade are able to choose their own 'flexible' expiration date, delivery type (physical/cash) and exercise type (American/European). Importantly, this means that it is a valid use case to have a single ETO or future option contract with multiple expires in the same month.

To defined Flex Options, you need to set the Contract Date Format to 'Daily', triggering the display of the contract date in the trade capture screen and the generation of the quote name to include the day, month and year when describing the product.

The user also has to set the formatting of the contract date in the trade capture screen by populating the "DateFormat" contract attribute with a java-compatible format value. Recommended approach is to use the value of "dd MMM yyyy".

### 17.3 Import

Listed Derivatives Contracts can be imported using the FOW Trade Data interface through the scheduled task FOW\_REFERENCE\_DATA\_IMPORT.

Please refer to the *Calypso FOW Integration Guide* for complete details.

[IMPORTANT NOTE: Once the contracts are created, you need to generate the actual products that will be traded]

# **Section 18. Cascading Process**

Important: In order to properly execute the cascading process, we require that the shorter-duration contracts are created in the database and the underlying futures are saved as products prior to the execution of the cascading process.

### 18.1 Triggering the Cascade Process

The cascade process will be run each day through the execution of a scheduled task called FUTURE\_CASCADE. This task should be run at EOD after all offsetting is run, but before IM and VM calculation and statements are generated. Products which are eligible for cascading are determined by the list of values of the CascadeFrom attribute across all contracts. The cascade process will be triggered only on the open positions in these products where the First Delivery Date adjusted by the CascadeDateLag and the ST process date are equal.

The cascading process only needs to be applied to open positions in cascading products. If transactions in a cascading contract have been cleared, and have since all been closed out, the cascading process does not need to be triggered.

Although it is not expected, this task can be run backdated. If the cascade process has already been run, by definition all positions will be closed, so there will be no impact of running it on a date for which it has already been run.

Scheduled Task Definition										
Scheduled Task Definition										
Use the dialog below to define the attrib	utes for the task to be executed. These attributes will control the behavior of the task. There									
are two types of attributes, general attr	ibutes which are the same across all tasks and task specific attributes. Scheduling of the task is									
performed using the Task Trigger Definiti	ion dialog									
Task Type: FUTURE_CASCADE										
External Reference: Future Cascade Proc	xternal Reference: Future Cascade Process									
Comments:										
Description:										
Eventing Demonstration										
Execution Parameters	Description Francisco Francisco Time (CLA)									
Attempts: I Retry Arter:	minutes Expected Execution Time (SLA):									
JVM Settings: -Xms512m -Xmx1024m -XX:N	1axPermSize=256m									
Log Settings:										
Task Notification Options										
Send Emails Publish Business Eve	ents To User: 👻									
🗆 Common Attributes										
Task ID										
Processing Org	EXANE CLEARING									
Trade Filter										
Pilter Set	dofault									
Timezone	America/Los Angeles									
Valuation Time Hour	Alle Raycos_Algeres									
Valuation Time Minute										
Undo Time Hour										
Undo Time Minute										
Valuation Date Offset										
From Days										
To Days										
Pricer Measures										
Business Holidays										
Task Attributes	CLIDEV.									
Exchange	EUKEX									
Pricer Measures	a susible on all tasks and may or may not be applicable to this task and see the suspentities by task									
nease note, unis attribute is a generic attribute specific attributes below.	a valiable on all tasks and may or may not be applicable to this task and may be overwritten by task									
peane acalorico beloni										
	🔚 Save 🛛 😣 Cancel									

Attribute Name	Purpose/Impact
Processing Org	Processing Org in order to indicate which entities positions should be considered
Pricing Environment	Pricing Environment to source the closing price of the cascaded contract
Exchange	Exchange Attribute field which can be used to select one, several or all exchanges on which to run the process. This will be useful to run the process in a "follow the sun" mode. The pick list should be limited to LE's with a Role of 'MarketPlace'

### 18.2 Results of the Cascade Process

Running the cascade scheduled task on a day when open positions exist in a product which is linked to one or more other contracts by their CascadeFrom attribute will result in 1) the close out of the open position at either the closing price that day or the original trade price and 2) the generation of open positions in all of the existing products on the contracts which were pointing to the original position. If a contract exists, but the underlying future products have not been saved, new positions will not be generated.

# **Section 19. Trade Merge Process**

Merging is when the user wishes to combine numerous trades where the key elements are identical into a single trade, there are a number of reasons why they do this e.g. many fills of a large order come down the cleared trade interface so they want to re-form the order, so statement just shows the single merged trade.

For example

Contract	IFLL I (Future)
Contract Value	10.00

Executions												
Product	B/S	Qty	Price	Trade Value								
IFLL I SEP15	В	11	99.90	10,989.00								
IFLL I SEP15	В	12	99.90	11,988.00								
IFLL I SEP15	В	9	99.90	8,991.00								
		32	99.90	31,968.00								

Trade booking - before merge													
Product	B/S	Qty	Price	Trade Value	Account								
IFLL I SEP15	В	11	99.90	10,989.00	ACT1								
IFLL I SEP15	В	12	99.90	11,988.00	ACT1								
IFLL I SEP15	В	9	99.90	8,991.00	ACT1								

Trade booking - after merge											
Product B/S Qty Price Trade Value Account											
IFLL I SEP15	В	32	99.90	31,968.00	ACT1						

\* final merged trade that shows on the client statement and back-office reports

## 19.1 Merging Trade Eligibility

Trades can only be merged that

- 8. Top-day (booking date = trade date)
- 9. Fully open (no liquidations have been performed on them)
- 10. Same Position Aggregation (ClientAccount, CounterPartyAccount, Position)
- 11. All buys (long) or all sells (short)
- 12. ServiceLevel match e.g. do not allow Full Service and Cleared Only trades to match

- 13. Order Taker and Executing Broker match
- 14. Trade hasn't already been merged

### 19.2 Selecting Trades to Merge

In the Trade Browser and Trade Open Quantity reports the user needs to select more than one trade that are eligible for merging (see Merging trade eligibility).

Right-click > Process > ETD Merge/Split > Merge...

report Data view L	фон ман	et Data Process Utilities Help								
🛃 Criteria										
Frade Id Client Account	Ctpty Acct	Product Description		Buy/Sell	Quantity	Price / Entered Date	Trade	Date	Settle Date	C
46401 ABC STD 001	EUREX A1	ETOEquity/UHRN/EUREX/CALL/80/SVN0/1	7/06/2016	Sell	(1.00)	5.8500000/20/06/2016	18/04/	2016	18/04/2016	Cł
46511 ABC STD 001 46509 ABC STD 001 46510 ABC STD 001	CB CLIENT CB CLIENT	FutureMM/LIFFE5/21/12/2016 FutureMM/LIFFE5/21/12/2016 FutureMM/LIFFE5/21/12/2016	Action	•	(6.00) (17.00)	99.1024/06/2016 99.1024/06/2016 99.1024/06/2016	20/04/ 20/04/ 20/04/	2016	20/04/2016 20/04/2016 20/04/2016	
46464 ABC STD 001	CB CLIENT	FutureMM/LIFFE5/17/08/2016	Show	· · ·	(25.00)	99.45 21/06/2016	12/04/	2016	12/04/2016	GE
46467 ABC STD 001	CB CLIENT	FutureMM/LIFFE5/20/04/2016	Proces	5 🔸	Add Ger	neric Comment	14	2016	20/04/2016	GE
46456 DEF STD 003	CB CLIENT	FutureMM/LIFFE5/20/04/2016 FutureMM/LIFFE5/21/12/2016	🗊 Config	ure 🔸	Cancel L	atest Generic Comment	s )4/	2016	19/04/2016	GE
46410 ABC STD 003 46410 ABC STD 001 46433 ABC STD 001	EUREX A1 CB CLIENT	FutureBond/EUREX35/08/09/2016 FutureBond/CBOT13/18/06/2016		Sell	ETD Mer	ge/Split	+	Merg	je	LaP
								Reve	rt Merge	

Merge confirmation screen will appear where the user needs to select:

Fee Processing Mode – these two modes can produce different results when the underlying fee configurations use 'Volume based tiered calculations'

Client; for all fees where the Legal Entity has role = Client

- Recalculate = recalculate fees for the new merged quantity
- Copy = take original trades calculated fees, sum each Fee Type and apply to the new merged trade

Counterparty; for all fees where the Legal Entity has role <> Client e.g. Counterparty

- Recalculate = recalculate fees for the new merged quantity
- Copy = take original trades calculated fees, sum each Fee Type and apply to the new merged trade

Confirmation if merging same priced trades or different prices that will be averaged

- Merge same price trades
- Merge and average price

Mer	ge		10	-	-	-	-	8
E	TD Clearing Tra	ade Merge utilit	у					
	Select a fee proc	essing mode and clic	k on Merge to	o execute				
Se	elect the fee proce	ssing mode						
	Client	CounterParty						
	Recalculate	Recalculate	Merg	e same price trades				
	О Сору	Copy	Merg	e and average price				
						6	Merce	Cancel
						L	merge	curreer

Once the Merge has been confirmed, screen will explain the actions with the Trade Ids

- Total Quantity of the trades to be merged
- Cancel these trades
- New trade generated with new Total Quantity



On 'Close' the Trade Browser, Trade Open Quantity reports will auto refresh to display the newly merged trade

🏒 Trade	Browser / Trade	e Browser									
Report	Data View Ex	port Marke	et Data Process Utilities Help								
	1 🛋										
📑 Criteri	а										
Trade Id	Client Account	Ctpty Acct	Product Description	Buy/Sell	Quantity	Price	Entered Date	Trade Date	Settle Date	Currency	TradeStatus
4646	ABC STD 001	CB CLIENT CB CLIENT	FutureMM/LIFFE5/17/08/2016 FutureMM/LIFFE5/21/12/2016	Sell Sell	(25.00) (40.00)	99.45	21/06/2016 21/06/2016	12/04/2016 19/04/2016	12/04/2016 19/04/2016	GBP GBP	VERIFIED VERIFIED
4631	ABC STD 001	EUREX A1	ETOEquity/UHRN/EUREX/CALL/80/SVN0/17/06/201	6 Sell	(1.00)	5.8500000	20/06/2016	18/04/2016	18/04/2016	CHF	VERIFIED

### 19.3 Merge and Average Price

For selected trades with different trade prices and the 'Merge and average price' option selected.

The system will calculate the weighted average price.

#### For example

	Client	Counter-						
Trade Date	Acct	party Acct	Ссу	Exchange	Contract	Expiry	Qty	Trade Price
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-95	166.320000
20-Jul-16	ClientAcct	ERXAGT	EL	JR EURX	FGBL	08-Sep-16	-100	166.320000
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-100	166.320000
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-68	166.320000
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-32	166.310000
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-14	166.310000
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-86	166.320000
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-100	166.320000

Trade Date	Client Acct	Counter- party Acct	Ссу	Exchange	Contract	Expiry	Qty	Trade Price
20-Jul-16	ClientAcct	ERXAGT	EUR	EURX	FGBL	08-Sep-16	-595	166.319227
						Total Quantity	-595	

## 19.4 Revert Merge

In the Trade Browser and Trade Open Quantity reports the user can revert a previously performed merge (only allowed on same business day).

Right-click > Process > ETD Merge/Split > Revert Merge...

Z Trade Browser / Trade Browser										L-31
Report Data View Export Market Data Process Utilities Help										
18 13 14										
🔁 Criteria										
Trade Id Client Account Ctpty Acct Product Description		Buy/Sell	Qu	antity	Price	Entered Date	Trade Date	Settle Date	Currency	TradeStatu
46464/ABC_STD_001CB_QLIENT_FutureMM/LIFFE5/17/08/2016 46459/DEF_STD_003CB_QLIENT_FutureMM/LIFFE5/21/12/2016	_	Sell		(25.00) (40.00)	99.4 99.9	5/21/06/2016 0/21/06/2016	12/04/2016 19/04/2016	12/04/2016 19/04/2016	GBP GBP	VERIFIED
46401 ABC STD 001 EUREX A1 ETOEquity/UHRN/EUREX/CALL/80/SVN0/17/06/	20	Action	•	1.00	5.850000	0 20/06/2016	18/04/2016	18/04/2016	CHF	VERIFIED
46463 ABC STD 001 CB CLIENT FutureMM/LIFFE5/17/08/2016		Show	- 9	5.00	99.5	0 21/06/2016	12/04/2016	12/04/2016	GBP	VERIFIED
46433.48C STD 001 CB CLIENT Future@mm/LIFFE5/20/04/2016 46433.48C STD 001 CB CLIENT FutureBond/CBOT13/18/06/2016		Process		A	dd Generi	c Comment		19/04/2016	USD	VERIFIED
46410.48C STD 001 EUREX A1 FutureBond/EUREX33/08/09/2016 46456/DEF STD 003 CB CLIENT FutureMM/LIFFE5/21/12/2016		Configur	re •	0	ancel Late	st Generic Cor	nments	18/04/2016	GBP	VERIFIED
				E	TD Merge	/Split		Merge		
								Revert N	lerge	
								Split		
								Revert S	plit	

Once the Revert Merge has been confirmed, screen will explain the actions with the Trade Ids

- Cancel the merged trade
- Book as New the original trades

Revert Merge
ETD Clearing Trade Revert Merge utility         Click on Revert Merge to execute. Trades will be filtered before         merge/split/average, in order to meet standard criteria, such as not being part of         an existing liquidation, or being top day trades         Initialized, filtered/accumulated trade count: 1         Processing merge trades to cancel         Loading cancelled trades for restoring         Loaded 3 cancelled trades         Process date: 20/04/2016         Cancelled trades: [46512]         New trades: [46515, 46514, 46513]
Success Revert Merge Close

On 'Close' the Trade Browser / Trade Open Quantity reports will auto refresh to display the original 'un-merged' trades

🛃 Trade	Browser / Trade	e Browser									
Report	Report Data View Export Market Data Process Utilities Help										
📑 Criteri	a										
Trade Id	Client Account	Ctpty Acct	Product Description	Buy/Sell	Quantity	Price /	Entered Date	Trade Date	Settle Date	Currency	TradeState
46401	ABC STD 001	EUREX A1	ETOEquity/UHRN/EUREX/CALL/80/SVN0/17/06/2016	Sell	(1.00)	5.8500000	20/06/2016	18/04/2016	18/04/2016	CHF	VERIFIED
46515	ABC STD 001	CB CLIENT	FutureMM/LIFFE5/21/12/2016	Sell	(10.00)	99.10	24/06/2016	20/04/2016	20/04/2016	GBP	VERIFIED
46513	BABC STD 001	CB CLIENT	FutureMM/LIFFE5/21/12/2016	Sell	(6.00)	99.10	24/06/2016	20/04/2016	20/04/2016	GBP	VERIFIED
46514	ABC STD 001	CB CLIENT	FutureMM/LIFFE5/21/12/2016	Sell	(17.00)	99.10	24/06/2016	20/04/2016	20/04/2016	GBP	VERIFIED
46464	ABC STD 001	CB CLIENT	FutureMM/LIFFE5/17/08/2016	Sell	(25.00)	99.45	21/06/2016	12/04/2016	12/04/2016	GBP	VERIFIED
46463	ABC STD 001	CB CLIENT	FutureMM/LIFFE5/17/08/2016	Sell	(15.00)	99.50	21/06/2016	12/04/2016	12/04/2016	GBP	VERIFIED

### 19.5 Merge Schedule Task

Merging can be performed as a Scheduled Task.

Trade selection is controlled by a standard Trade Filter

Task Attribute:

- Client Fee processing mode (Recalculate or Copy)
- Counterparty Fee processing mode (Recalculate or Copy)
- Merge Behaviour (Merge same price trades or Merge and average price)

ETD\_TRADE\_MERGE Scheduled Task definition

🔀 Scheduled Tas	sk Det	inition		
Scheduled Ta	isk D	efinition		
Use the dialog	g belo	w to define the attributes for the task to be executed. These attributes will	control the	behavior of the task. There
the same acro	oss all	tasks and task specific attributes. Scheduling of the task is performed using	the Task T	rigger Definition dialog
Task Description				
Task Ty	/pe:	ETD_TRADE_MERGE		
External Referen	nce:	ETD_TRADE_MERGE		
Commer	nts:	ETD_TRADE_MERGE		
Descripti	ion:	ETD_TRADE_MERGE		
Execution Parameter	ers			
Attempts: 1	L	Retry After: 0 minutes Expected Execution Time (SLA):	5	minutes
JVM Settings: ->	Xms51	2m -Xmx 1024m -XX:MaxPermSize=256m		d
Log Settings:				
Task Notification Op	ptions			
Send Emails		Publish Business Events To User:		
Common Attri	ibute	5		
Task ID			7001	
Processing Org				
Trade Filter			Cleared Po	ositions
Filter Set				
Pricing Environm	lent		default	
Timezone			Europe/Lo	ndon
Valuation Time H	lour		22	
Valuation Time M	/linute		0	
Undo Time Hour				
Undo Time Minut	te			
Valuation Date C	Offset			
From Days				
To Days				
Pricer Measures				
Business Holiday	/S			
Task Attribute	es			
Client Fee Proce	essing	Mode	Сору	
CounterParty Fe	ee Pro	cessing Mode	Recalculat	te
Merge Behavior			Merge and	d average price

This Schedule Task for valuation date=today (e.g. 04-07-2016) should perform the exact same merges as in a Trade Browser set with the same Trade Filter

Trade Start = 04-07-2016

Trade End = 04-07-2016

Trade Filter = Cleared Positions (matching the Scheduled Task's trade filter)

With all trades selected and Merge + Fee processing mode=Recalculate selected

e.g.

🗾 Trade Browser /	Trade Browser							
Report Data View	w Export Market D	ata Process Utili	ties Help					
	3							
Criteria								
Criteria								
Template Description							🔲 Undo Date	
Trade	St <mark>art 04/07/2016</mark>	-	<b>v</b>	End 04/07/2016	<b>•</b>	<b>~</b>	Trade Filter	Cleared Positions
Settle	Start	- 💌	Y	End	+ 💌	T	SD Filter	
Process	Start	- 💌	<b>•</b>	End	+ 💌	-	Filter Set	
Maturity	Start		Y	End	+ 💌	💌 🔽 Open	Currency	
Trade Id	ID 💌		Bundle		Id 💌		Product Family	Future, FutureOption, ETO, ETOCommodity
Buy/Sell			▼ Max Rows#				Product Type	
CP role: ALL			Books				Product Id	_
Processing Org			I Include C	hild Legal Entities			Status	PENDING, PRICING, VERIFIED, ALLOCATED, R

# 19.6 Merge Trade Keywords

New trade keywords have beed introduced for audit and investigation purposes.

Example of merging two trades

Original trades

Trade Id	Quantity	Status	MergeAs	OriginalMergedTrade
0001	100	VERIFED		
0002	300	VERIFED		

After merging

Trade Id	Quantity	Status	MergeAs	OriginalMergedTrade
0001	100	CANCELED	0003	
0002	300	CANCELED	0003	
0003	400	VERIFED		

After reverting the merge

Trade Id	Quantity	Status	MergeAs	OriginalMergedTrade
0001	100	CANCELED	0003	

0002	300	CANCELED	0003	
0003	400	CANCELED		
0004	100	VERIFED		0001
0005	300	VERIFED		0002

## 19.7 Optional Keywords to 'copy' from Original Trades - Merging

**keywords2CopyUponMerge** Domain Name controls which optional keywords to 'copy' from original trades to the new merged trade.

For example



Example of merging two trades

Original trades

Trade Id	Quantity	Status	OpenClose	OrderId
0001	100	VERIFED	0	12005
0002	300	VERIFED	0	12005

After merging

Trade Id	Quantity	Status	OpenClose	OrderId
0001	100	CANCELED	0	12005
0002	300	CANCELED	0	12005
0003	400	VERIFED	0	12005

# **Section 20. Trade Split Process**

Splitting is when the user wishes to allocate a single executed trade across numerous (sub) accounts. Typically fund managers do this so each individual fund account has a portion of the actual executed trade.

For example

Contract	IFLL I (Future)
Contract Value	10.00

Executions							
Product	B/S	Qty	Price	Trade Value			
IFLL I SEP15	В	32	99.90	31,968.00			

Trade booking – before split									
Product	B/S	Qty	Price	Trade Value	Account				
IFLL I SEP15	В	32	99.90	31,968.00	ACT1				

Trade booking – after split									
Product	B/S	Qty	Price	Trade Value	Account				
IFLL I SEP15	В	11	99.90	10,989.00	ACT1				
IFLL I SEP15	В	12	99.90	11,988.00	ACT2				
IFLL I SEP15	В	9	99.90	8,991.00	ACT3				

\* final split trades that shows on the client statement and back-office reports

## 20.1 Splitting Criteria

Split to only client accounts belonging to the same Client Legal Entity as the account the pre-split trade is booked to.

Only allow trades to be split that

- 1. Top-day (booking date = trade date)
- 2. Fully open (no liquidations have been performed on it)

## 20.2 Selecting Trade to Split

In the Trade Browser and Trade Open Quantity reports the user needs to select one trade that is eligible for splittinging (see Splitting Criteria).

Right-click > Process > ETD Merge/Split > Split...

A Trade Browser / Trade	Browser		Sec. 1		-	1	_					-
Report Data View Ex	port Marke	et Data	Process	Utili	ties Help							
🖶 Criteria												
Trade Id Client Account	Ctpty Acct	Produ	ct Description	1	Buy/Sell	Quantity	Price	Entered Da	te Trade Date	Settle Date	Currency	TradeStat
46459 DEF STD 003 46454 DEF STD 003	CB CLIENT CB CLIENT	Future	MM/LIFFE5/2 MM/LIFFE5/2	1/12	/2016 Sell /2016 Buy	(40.00)	99.90 99.90	21/06/201	5 19/04/2016 5 19/04/2016	19/04/2016 19/04/2016	GBP GBP	VERIFIED VERIFIED
46456 DEF STD 003	CB CLIENT	Futu	Action Show	•	/2016  Sell	(8.00)	99.89	21/06/2010	5 19/04/2016	19/04/2016	GBP	VERIFIED
			Process	•	Add Gener	ic Comme	nt					
			Configure	e ,	Cancel Late	st Generic	Comn	nents				
					ETD Merge	/Split		•	Merge			
									Revert Merg	je		
									Split			
									Revert Split			

Split screen will appear where the user needs to select the client account(s) and quantity of the split allocation, and the fee processing mode.

- Add Account
  - User to select from the list of additional client accounts of the Client Legal Entity of the original trade
  - User to enter Quantity for this split allocation, must be less than 'Remaining Quantity'
  - Repeat if splitting to multiple accounts
- Select fee processing mode for Client and Counterparty fees
  - Recalculate = recalculate fees for the new split quantities
  - Copy = take original trades calculated fee, pro-rata according to quantities and apply to the new split trades
  - these two modes can produce different results when the underlying fee configurations use 'Volume based tiered calculations'
- Split button to process

ETD Clearing Trade Split utility           Set: the accounts where the trade will be split into, and click on Split to execute           Id         Trade Date         Product         Direction         Price         Client         Client Account         CounterParty Account         F           3904         0302 (2012)         XELR-FESK #/JXN17         Buy         121.34         ABC123_001         BUREX CLEARING         BUREX A1           Added allocation:         15 to ABC123_002 (3708)         Add Account         Reset         Full allocation           Added allocation:         15 to DEF456_002 (3716)         Client Account         All         ABC122_002 (3708)         ABC123_002 (3708)         Image: Client Account         Image: Client Account <th></th> <th></th> <th></th> <th></th> <th></th> <th>-</th> <th></th> <th></th> <th>Test Street</th> <th>📕 Split</th>						-			Test Street	📕 Split
Id     Trade Date     Product     Direction     Price     Client     Client Account     CounterParty     Counte								utility e trade will be split into, and click on Split to execute	ring Trade Split of the accounts where the	ETD Clean Select th
3904         0.3/01/2017         NEUR-FESX-F/JUN17         Buy         121.34         ABC123         ABC123_001         ELREX CLEARING         ELREX AL           Added allocation:         15 to ABC123_002 (3708)         Added allocation:         15 to ABC123_002 (3708)         Added allocation:         Added allocation:         Reset         Full allocation           Added allocation:         5 to DEF456_002 (3716)         Full allocation         Adde Account         Adde Acc	Remaining Quantity	CounterParty Account	Client Account CounterParty CounterParty Accou		Client	Price	Direction	Product	Trade Date	Id
Added allocation: 15 to AE(212, 002 (3708))         Added allocation: 15 to DEF456_002 (3716)         Added allocation: 5 to DEF456_002 (3716)         Client Account         ABC122_002 (3708)         DEF456_001 (3713)         DEF456_002 (3716)	0	EUREX A1	EUREX CLEARING	23 ABC123_001 F		121.34	Buy	XEUR-FESX-F/JUN17	03/01/2017	3904
Select the fee processing mode Client CounterParty @ Recalculate	located Quantity 15 15 5		on	tt Reset Full allocati (3708) (3713) (3716) (3716)	Add AA Client Acc ABC123 DEF456_ DEF456_ Select the Client @ Re			02 (3708) 01 (3713) 2 (3716)	tion: 15 to ABC 123_0 tion: 15 to DEF456_0 tion: 5 to DEF456_00	Added allocat Added allocat Added allocat

Once the Split has been confirmed, screen will explain the actions with the relevant Trade Ids

- Cancel of original trade
- New trades
| 📕 Split                        | Same Browner  |                        |           |        |        |  |                         |                |                      | ×                  |
|--------------------------------|---|------------------------|-----------|--------|--------|--|-------------------------|----------------|----------------------|--------------------|
| ETD Clear<br>Select th         | TD Clearing Trade Split utility Select the accounts where the trade will be split into, and click on Split to execute |                        |           |        |        |  |                         |                |                      |                    |
| Id                             | Trade Date  | Product                | Direction | Price  | Client | c                                      | Client Account          | CounterParty   | CounterParty Account | Remaining Quantity |
| 3904                           | 03/01/2017  | XEUR-FESX-F/JUN17      | Buy       | 121.34 | ABC1   | 123                                    | ABC123_001              | EUREX CLEARING | EUREX A1             | 0                  |
| Added allocat<br>Added allocat | ion: 15 to ABC123_0<br>ion: 15 to DEF456_0  | 02 (3708)<br>01 (3713) |           |        |        | Add Acco                               | unt Reset Full allocati | on             |                      |                    |
| Added allocat                  | ion: 5 to DEF456_00   | 2 (3716)               |           |        |        | Client Accou                           | nt                      |                |                      | Allocated Quantity |
| Process date:                  | o3/01/2017  | ade count: 1           |           |        |        | ABC123_00                              | 15                      |                |                      |                    |
| Cancelled tra                  | des: [3904]   |                        |           |        |        | DEF456_001 (3713)<br>DEF456_002 (3716) |                         |                |                      | 15                 |
| Invew trades:                  | 3905, 3906, 3907]   |                        |           |        |        |  |                         |                |                      |                    |
|                                |   |                        |           |        |        |  |                         |                |                      |                    |
|                                |   |                        |           |        |        |  |                         |                |                      |                    |
|                                |   |                        |           |        |        | Select the fe                          | e processing mode       |                |                      |                    |
|                                |   |                        |           |        |        | Client                                 | CounterParty            |                |                      |                    |
|                                |   |                        |           |        |        | @ Recald                               | culate 🔘 Recalculate    |                |                      |                    |
|                                |   |                        |           |        |        | 🔿 Сору                                 | Осру         Осру       |                |                      |                    |
|                                |   |                        |           |        |        |  |                         |                |                      |                    |

On 'Close' the Trade Browser, Trade Open Quantity reports will auto refresh to display the newly split trades, with keyword populated – see Trade Split Keywords section

🔀 Trade Br	A Trade Browser / Trade Browser												
Report D	Report Data View Export Market Data Process Utilities Help												
Criteria	Criteria												
Trade Date	Trade Id	Client Acct	CPtv Acct	Product	Ouantity	Trade Price	Trade Ccv	Book	CounterParty	Entered Date	TradeStatus	Settle Ccv	TradeSource
03/01/2017	3907	DEF456_002	EUREX A1	XEUR-FESX-F/JUN17	5.00	121.34	EUR	ERSTE	EUREX CLEARING	09/01/2017	VERIFIED	EUR	FromSplit
03/01/2017	3906	DEF456_001	EUREX A1	XEUR-FESX-F/JUN17	15.00	121.34	EUR	ERSTE	EUREX CLEARING	09/01/2017	VERIFIED	EUR	FromSplit
03/01/2017	3905	ABC123_002	EUREX A1	XEUR-FESX-F/JUN17	15.00	121.34	EUR	ERSTE	EUREX CLEARING	09/01/2017	VERIFIED	EUR	FromSplit
											L		

### 20.3 Revert Split

In the Trade Browser and Trade Open Quantity reports the user can revert a previously performed merge (only allowed on same business day)

Right-click > Process > ETD Merge/Split > Revert Split...

Report Data	View Export Ma	rket Data Process Utilities H	leln			
Criteria						
Trade Id Client 46459 DEF S 46454 DEF S 46525 DEF S 46526 DEF S 46456 DEF S	Account Ctpty Ac TD 003 CB CLIEN D 003 CB CLIEN Action Show D 003 CB CLIEN	t Product Description IT FutureMM/LIFFE5/21/12/2016 IT FutureMM/LIFFE5/21/12/2016 IT FutureMM/LIFE5/21/12/2016 IT FutureMM/LIFFE5/21/12/2016	Buy/Sell Sell Buy Buy Buy Sell	Quantity (40.00) 20.00 25.00 15.00 (8.00)	Price 99.90 99.90 99.85 99.85 99.89	Entered Dat 21/06/2016 21/06/2016 24/06/2016 24/06/2016 21/06/2016
	Frocess ,	Add Generic Comment Cancel Latest Generic Com ETD Merge/Split	ments	Merg Reve	e rt Mer <u>c</u>	ge
				Split.		
				Reve	rt Split.	

Once the Revert Split has been confirmed, screen will explain the actions with the relevant Trade Ids

- Cancel of the split trades
- Book as New the original trade

Revert Split
ETD Clearing Trade Revert Split utility Click on Revert Split to execute. Trades will be filtered before merge/split/average, in order to meet standard criteria, such as not being part of an existing liquidation, or being top day trades
Checking if missing split trades No missing split trades Initialized, filtered/accumulated trade count: 2 Processing split trades to cancel Loading 1 cancelled trades for restoring Loaded 1 cancelled trades Process date: 20/04/2016 Cancelled trades: [46523, 46522] New trades: [46524]
Success Revert Split Close

On 'Close' the Trade Browser / Trade Open Quantity reports will auto refresh to display the original 'un-split' trades

🔀 Trade Browser / Trade Browser								_ 0			
Report I	Report Data View Export Market Data Process Utilities Help										
	) 🗃										
📑 Criteria	1										
Trade Id	Client Account	Ctpty Acct	Product Description	Buy/Sell	Quantity	Price	Entered Date	Trade Date	Settle Date	Currency	TradeStatu
46459	DEF STD 003 DEF STD 003	CB CLIENT	FutureMM/LIFFE5/21/12/2016 FutureMM/LIFFE5/21/12/2016	Sell Buy	(40.00)	99.90 99.90	21/06/2016	19/04/2016	19/04/2016	GBP GBP	VERIFIED
46525 46526	DEF STD 003 DEF STD 002	CB CLIENT CB CLIENT	FutureMM/LIFFE5/21/12/2016 FutureMM/LIFFE5/21/12/2016	Buy Buy	25.00 15.00	99.85 99.85	24/06/2016 24/06/2016	20/04/2016 20/04/2016	20/04/2016 20/04/2016	GBP GBP	VERIFIED VERIFIED
46456	DEF STD 003	CB CLIENT	FutureMM/LIFFE5/21/12/2016	Sell	(8.00)	99.89	21/06/2016	19/04/2016	19/04/2016	GBP	VERIFIED

## 20.4 Split Trade Keywords

### Expected split keywords

#### Example of splitting into two trades

Original trades

Trade Id	Quantity	Status	SplitFrom	OriginalSplitTrade
0010	700	VERIFED		

After splitting

Trade Id	Quantity	Status	SplitFrom	OriginalSplitTrade
0010	700	CANCELED		
0011	200	VERIFED	0010	
0012	500	VERIFED	0010	

After reverting the split

Trade Id	Quantity	Status	SplitFrom	OriginalSplitTrade
0010	700	CANCELED		

0011	200	CANCELED	0010	
0012	500	CANCELED	0010	
0013	700	VERIFED		0010
0005	300	VERIFED		0002

# 20.5 Optional Keywords to 'copy' from Original Trades - Splitting

keywords2CopyUponSplit Domain Name controls which optional keywords to 'copy' from original trade to the new split trades.



#### Example of splitting into two trades

#### Original trades

Trade Id	Quantity	Status	OpenClose	OrderId
0010	700	VERIFED	0	13900

After splitting

Trade Id	Quantity	Status	OpenClose	OrderId
0010	700	CANCELED	0	13900
0011	200	VERIFED	0	13900
0012	500	VERIFED	0	13900

# Section 21. Listed Derivatives Fees & Commissions

This section recommends the market standard configuration that a Clearing Broker could use for their daily activities. Of course, the system is configurable and can be adapted to any client or user to best meet their needs.

There are 2 supported charging strategies for ETD products – "Trade Fees" for daily billing and also detailed on the client statement and "Billing Fee" for period to date billing, typically accrued for the calendar month and billed a set number of days into the next month.

### 21.1 Inventory Buckets

Inventory Buckets are used aggregating different fee types into balance buckets for viewing and reporting in the system via the Inventory Position Report and also for reporting on the client statement. The following two buckets are recommended

- Domain Value
  - feeDefinitionAttributes

**ETD.InventoryBucket** – to enable the user to configure which buckets the different fee types can be grouped together

feeDefinitionAttributes.ETD.InventoryBucket

Commissions – for the FCM's add-on charge for its services

Fees – for the pass-through charges of an exchange or 3rd party broker, which the FCM will need to pay out



## 21.2 Fee Definition

### Configuration > Fees, Haircuts & Margin Calls > Fee Definition

The following Fee Definitions are recommended

<b>Fee Type</b>	Role	Calculator	Inventory Bucket	Notes
COMMISSION	Client	FeeGrid	Commission	Client Commission
EXCHANGE_FEE	Counterparty	FeeGrid	Fees	Exchange fee payable to counterparty
EXCHANGE FEE	Client	FeeGrid	Fees	Exchange fee passed onto the client
CLEARING_FEE	Counterparty	FeeGrid	Fees	Clearing house fee payable to counterparty
CLEARING FEE	Client	FeeGrid	Fees	Clearing house fee passed onto the client
EXECUTION_FEE	ExecutingBroker	FeeGrid	Fees	Execution fee (Cleared Only / Give Ins) to pay to the Executing Broker
EXECUTION FEE	Client	FeeGrid	Fees	Execution fee (Cleared Only / Give In) passed onto the client

<b>Fee Type</b>	Role	Calculator	Inventory Bucket	Notes
EXECUTION BROKERAGE	Counterparty	FeeGrid	Fees	Execution fee (Execution Only / Give Ups) to receive from the clearing broker counterparty
FLOOR_BROKERAGE	Counterparty	FeeGrid	Fees	Floor brokerage payable to the counterparty
FLOOR BROKERAGE	Client	FeeGrid	Fees	Floor brokerage passed onto the client
NFA_FEE	NFA	FeeGrid	Fees	NFA fee payable to the National Futures Association
NFA FEE	Client	FeeGrid	Fees	NFA fee passed onto the client

### 21.3 Fee Grid

### Configuration > Fees, Haircuts & Margin Calls > Fee Grid

The following Fee Grid configurations are recommended

## 21.3.1 Client Commission Example

### COMMISSION

- Attribute: TRADE\_DATE\_TYPE = TRADE DATE
  - fee settle date will be the booking date, typically for daily settled comm & fees

	差 Fee Grid Window -	/ersion - 12
	Trade Fee Grid Billing	rid Browse
	Grid Id	8064 M Round Turn
	Processing Org	ALL WithHoldingTax
	Legal Entity	ABC123 Role Client
	Fee Type	COMMISSION   SD Filter NoFeesOnCashORPhysicalExCorpAction
	Valid from	Valid to Value Value Value
	Exchange	ALL FEE_PAYREC FeeCurrency
	Products	R,ETOVolatility,G.ETD,G.Futures,G.Option Ccy ANY RELATED_FEE RelatedFeeCheckRole
	Security	Lag 0 Bus V NO_CHANGE V RelatedFeeRecomputeDate
	Fee Details	ZeroAmount true
	Amount	-1 Attributes
	Description C	MISSION
l	Min Amount. 0	Max Amount. 0 Calculator FeeConfig
		Apply Refresh ClearAll

### 21.3.2 Counterparty Fees Example

#### EXCHANGE\_FEE & CLEARING\_FEE

- Associated FeeConfigs required (EXCHANGE\_FEE & CLEARING\_FEE)
  - To set exchange, product, formula and rates
  - Attribute: TRADE\_DATE\_TYPE = DATE RULE + DateRuleName
  - $_{\odot}$   $\,$  fee settle date will be set by the date rule, typically for End of Month settled fees

ade Fee Grid Billin	ig Grid Browse							
Grid	id	15218		Ro	und Turn			
Processing O	rg ALL			C Wi	thHoldingTax		Fee Grid Attributes Wi	indow
Legal Ent	ity ALL		Ro	eCount	erParty	-		
Eee Tu		_					Name	Value
ree i y	EXCHANGE_FEE	•	SD Fille				AdjustmentRelatedFees	
Valid fro	m		Valid to				DateRuleName	BILLING SETTLEMENT
						_	FEE_PAYREC	
Exchan	ge ALL						FeeCurrency	
	-		_				RELATED_FEE	
Produ	cts G.Futures,G.Option		Ccy	ANY			RelatedFeeCheckRole	
			Ξ.		Ir Ir		RelatedFeeRecomputeDate	2
Securi	ty		Lag	0	Bus  VO_CHANGE	•	TRADE_DATE_TYPE	DATE RULE
Fee Details							ZeroAmount	false
Amount	0				Attributes			
Description	EXCHANGE_FEE							
Min Amount.	0 Max Ar	nount. 0			Calculator FeeConfig	•	Apply Re	fresh Clear Al

## 21.3.3 Client Fees (Copied from the Counterparty) Example

EXCHANGE FEE & CLEARING FEE

- No FeeConfigs required, as taken from the Counterparty FeeConfig (above)
- Attributes
  - RELATED\_FEE = Fee Type to copy
  - RelatedFeeCheckRole = false, allows to copy from a different role (from Counterparty to Client)
  - RelatedFeeRecomputeDate = true, tells the system to rework the fee dates after the copy
  - TRADE\_DATE\_TYPE = TRADE DATE, changing from the End of Month (CtPty) to Daily (Client)

Grid Id	13506		Round Turn			
Processing Org	ALL		WithHoldingTax		Fee Grid Attributes Window	
Legal Entity	ABC123	Role	Client -			
Fee Type		SD Eilter			Name	Value
, cc type		SD T IIICI	nor ceson durier in ysicale x corpx caon		AdjustmentRelatedFees	
Valid from		Valid to			DateRuleName	
		_			FEE_PAYREC	
Exchange	ALL	•••			FeeCurrency	
Deaducte	Madeu EutoreEV EutoreOntionCommedite		ANIX		RELATED_FEE	EXCHANGE_FE
Products	tyindex,FutureFX,FutureOptionCommodity	(Lty	ANT		RelatedFeeDecomputeDate	true
Security		Lag	0 Bus - NO CHANGE	<b>-</b>	TRADE DATE TYPE	TRADE DATE
ee Details					ZeroAmount	true
Amount	-100		Attributes			
Description CO	PY EXCHANGE FEE					

## 21.3.4 Recommended Fee Grid

Grid Type: T = Trade Fee, B = Billing Fee

<b>Fee Type</b>	Grid Type	Legal Entity	Role	Attributes	Calculator	SD Filter
COMMISSION	Т	One per clearing client LE	Client	TRADE_DATE_TYPE = TRADE DATE ZeroAmount = true	FeeConfig	

<b>Fee Type</b>	Grid Type	Legal Entity	Role	Attributes	Calculator	SD Filter
EXCHANGE_FEE	Т	ALL	Counterparty	DateRuleName = BILLING SETTLEMENT	FeeConfig	
				TRADE_DATE_TYPE = DATE RULE		
				ZeroAmount = true		
EXCHANGE FEE	т	One per clearing	Client	RELATED_FEE = EXCHANGE_FEE	FeePercentage @ -100	
		client LE		RelatedFeeCheckRole = false	C	
				RelatedFeeRecomputeDate = true		
				TRADE_DATE_TYPE = TRADE DATE		
CLEARING_FEE	Т	ALL	Counterparty	DateRuleName = BILLING SETTLEMENT	FeeConfig	
				TRADE_DATE_TYPE = DATE RULE		
				ZeroAmount = true		
CLEARING FEE	Т	One per clearing	Client	RELATED_FEE = CLEARING_FEE	FeePercentage	
		client LE		RelatedFeeCheckRole = false	G 100	
				RelatedFeeRecomputeDate = true		
				TRADE_DATE_TYPE = TRADE DATE		
EXECUTION_FEE	Т	One per Executing	ExecutingBroker	DateRuleName = BILLING SETTLEMENT	FeeConfig	
		Broker LE		TRADE_DATE_TYPE = DATE RULE		
				ZeroAmount = true		
EXECUTION FEE	Т	One per clearing	Client	RELATED_FEE = EXECUTION_FEE	FeePercentage @ -100	
		client LE		RelatedFeeCheckRole = false	C	
				RelatedFeeRecomputeDate = true		
				TRADE_DATE_TYPE = TRADE DATE		
EXECUTION BROKERAGE	В	One per Giveup Clearing Broker	Counterparty		FeeGrid	Fees
FLOOR_BROKERAGE			Counterparty		FeeGrid	Fees
FLOOR BROKERAGE			Client		FeeGrid	Fees
NFA_FEE	Т	NFA	NFA	DateRuleName = BILLING SETTLEMENT	FeeConfig	Fees
				TRADE_DATE_TYPE = DATE RULE		

<b>Fee Type</b>	Grid Type	Legal Entity	Role	Attributes	Calculator	SD Filter
				ZeroAmount = true		
NFA FEE	т	One per clearing client LE	Client	RELATED_FEE = NFA_FEE RelatedFeeCheckRole = false RelatedFeeRecomputeDate = true TRADE_DATE_TYPE = TRADE DATE	FeePercentage @ -100	Fees

### 21.4 Fee Config

### Configuration > Fees, Haircuts & Margin Calls > Fee Configuration

### Example 1

COMMISSION for All Clients for Exchange = Eurex

🔀 Fee Config									
写 🕒 😫 🔚 👘 I	🔮 🐻								
Edit Browse									
References		Filtering		<b>⇔</b> -	Formula				
Config ID Name	26002 All Clients Eurex Commi	Filter Category Filters	Client Comm		🚽 Add	🖉 Edit 🛛 🙀 Delei	te		
Rule Type	Volume	Legal Entity	ALL		Min Amt	Max Amt	Min Days	Max Days	Formula
Scale By Range by Tenor Range by ResidualM Tiered Event Type Fee Currency Day Count Effective From Effective To Description	Quantity Iat	Role Fee Type Exchange Product Type SD Filter Future contract FutureOption contract ETO contract Contract group	Client COMMISSION EUREX			0	∞ 0	18000	1.1*Quantity
Rebate				7					

For subsets of clients, SD Filter is required

### Example 2

EXCHANGE\_FEE for All Counterparty for a specific ETO contracts

🔀 Fee Config			Example			_			
Edit Browse	2 🕫								
References Config ID	21608	Filtering Filter Category	🏟 Manual Fees	Formula	🖉 Edit 🛛 🙀 Dele	te			
Config Type Rule Type Scale By Range by Tenor Range by ResidualMa Tiered Event Type Fee Currency Day Count	Volume Quantity It	Filters Legal Entity Role Fee Type Exchange Category Future contract FutureOption contract ETO contract Contract group	ALL CounterParty EXCHANGE_FEE XEUR-ROY-O/EUREX,X.	Min Amt	Max Amt	Min Days ∞ 0	Max Days 18000	Formula -0.05*Quantity	Cal
Effective From Effective To Description Rebate	Uploaded via IFM Inter	Attributes	4 5	Ł					

### 21.5 Advanced Fee Methodology - Overall Minimum Total Fee

In addition to standard fees, an Overall Minimum fee can be calculated.

The system will check for any other additional fees that have been applied to that Legal Entity and check if the Overall Minimum Total has been exceeded.

If not, then the Fee Type (COMMISSION) is recalculated so the Overall Minimum Total is met.

Use Fee Config formula Variables - 'RelatedFeesAmount' to define the formula & rate of the Overall Minimum Fee.

Use Fee Grid attribute 'AdjustmentRelatedFees' > fee types, comma separated

- E.g. AdjustmentRelatedFees = EXCHANGE FEE, CLEARING FEE
- If empty, then no adjustment needed

#### Calculation logic example:

Applicable fees for this trade are COMMISSION (client), EXCHANGE\_FEE (counterparty), EXCHANGE FEE (client – copied from EXCHANGE\_FEE)

Fee config COMMISSION (client)

- 3.10 \* Quantity
- Overall Minimum Total = 3.50 \* Quantity
- Formula would be
  - Max(3.10\*Quantity + RelatedFeesAmount, 3.50\*Quantity) RelatedFeesAmount

Fee config EXCHANGE\_FEE (counterparty)

• 0.20 \* Quantity

### 21.6 Automatic Fees Override

When viewing automatic fees, you can override the fee amount.

- » Select an automatic fee and enter the modified amount in the Amount field. Then click Modify.
- > The 'Manual Amount' column will appear checked.
- » To prevent the fee from being automatically recomputed upon saving the trade, clear the Override column.
- Save the trade.

### 21.7 Check Fees Workflow Rule

Workflow rule 'ETDCheckFees' will block a trade in the workflow and raise a task station exception when one of the Legal Entities on the trade doesn't have at least one fee generated.

To control this workflow the following are required

Domain Value: ETD.Fee Roles

- tells the system which LE to check for fees
- default settings are



Legal Entity Attribute

ETD.Allow No Fees <true/false>

If this LE attribute is missing or 'false' and the trade has no fees for this LE then the trade will be blocked If this LE attribute is 'true' and the trade has no fees for this LE then the trade will NOT be blocked

#### Example #1

Counterparty LE has ETD.Allow No Fees = false

1	egal Entity	UBS CTP	IY.			Role	ALL	-	
Proce	ssing Org	ALL		•					
Attr	ibute Type	ETD.Allo	w No Fees	•	. v	alue	false		j
Id	Process	ing Org	Legal Entity	Re	le		Attribute Type /	Attribute Value	-
9	104 ALL		LIBS CTPTY	ALL		1	ETD. Allow No Fees	false	

Trade entered and Trade Fees shows fees only for the Client, none for the Counterparty

2	3									
Future	Ente	A Trade Fees	Details							
5ave										
Don't Solve		Type	AMOUNT		PAY			Fee Date	05/04/2017	1
BANK ALPHA	110	1.000	Annadorfer konstrant							
05/04/2017	1.1	Amount	0	0	FUR			Start Date	05/04/2017	1
BA001_A (8904)		Periodine	And Lot on		Lun					
UBS CTPTY	100	Manual A	mount	With 0	Verride			End Date	05/04/2017	r
UBS Clients (8813)	1.1	and the states						Mar Land	1	
	- 18	Method	NONE		•	2	Ľ	egai Entity	1	
EUREX	100	Incut		0.00	Cale		K	nown Date		
EUR		mput		0.00	Carc		De	escription	1	
XEUR-FOAX-F		Role	CounterPart	ty 🔹	D					
Mar 18	1.1				P-12				L	_
Buy	1.1	General	te	Add	Mo	dify	Re	move	Automat	tic Fr
70										
3,333.00		1	1.000	120.00	1.5	4.4	1.2	1.2.2.2.		
25		Type	Date	Start Date	t End	Date	Currency	Amount	Legal Entity	Pi
10207		COMMISSION	05/04/2017	05/04/201	7 05/0	4/2017	EUR	252.00	8A001	RE
PENDING										

Trade is blocked as PENDING

#### Task Station exception raised

AUTHORISE	BANK ALPHA	No fees found for UBS CTPTY Role=CounterParty/[ETDCheckFees]	05/04/17 14:25:41.116 o'clock BST	PSEventTrade	PENDING_TRADE	UBS CTPTY

#### Example #2

Counterparty LE has ETD.Allow No Fees = true

Attribute Type Attribute Value ETD.Allow No Fees true

Now allow the trade to go to VERIFED	even though no Counterparty fees
--------------------------------------	----------------------------------

Future E	🔀 Trade Fees	Details					1000
Price							
Save		-					
Don't Solve	Туре	AMOUNT	- F	AY 🚽		Fee Date	05/04/2017
BANK ALPHA							
05/04/2017	Amount		0 E	UR 🚽		Start Date	05/04/2017
BA001_A (8904)							
UBS CTPTY	Manual A	Amount	🔲 With Ov	erride		End Date	05/04/2017
UBS Clients (8813)							
	Method	NONE			Le	egal Entity	
					Kn	own Data	
EUREX	Input		0.00	Calc	- Ni	own Date	
EUR					De	scription	
XEUR-FDAX-F	Role	CounterPart	у 👻				
Mar 18							
Buy	Genera	te	Add	Modify	Rer	nove	Automatic
80							
3,333.00					-		
25	Туре	Date	Start Date	End Date	Currency	Amount	Legal Entity
10207	COMMISSION	05/04/2017	05/04/2017	05/04/2017	EUR	288.00	BA001
VERIFIED							
AMEND							
14:08:00							

## 21.8 Static Data Filters

Filters required to suppress the specific Fee Grid being triggered by the AutomaticFees workflow rule for the following

- 'Closeout' trade for an Option exercise, assignment or expiry
- 'Closeout' trade for a Futures expiry
- 'Closeout' trade used in the Corporate Action process to close the old trades, which are replaced by the new transformed trades
- Internal "cross" trades

SD Filters needed, see screenshots on configuration details

1. NoFeesOnCashORPhysicalExCorpAction

### ETD Clearing Setup Guide

Name	NoFeesO	nCashORPhysica	ExCorpAction	
External Ref.				
Comment				
Groups	ANY			
Criteria	i			
Attribute		Criteria		Filter Value(s)
IN Static Data F	N Static Data Filter		Add	NoFeesOnCashORPhysicalEx,NoFeesOnCorpActionTrades,NoFeesOnLiquidationTrade

### 2. NoFeesOnCashORPhysicalEx

Name	NoFeesOnCash	ORPhysicalEx							
External Ref.									
Comment									
Groups	ANY								
Criteria	h								
Attribute		Criteria		Filter Value(s)					
IN Static Data F	ilter	- ALL_IN	Add	ExercisedOptionNULL,NoFeeInternal,NoFeesOnLiquidationTrade					

### 3. NoFeesOnCorpActionTrades

🔀 Static Dat	a Filter Window [150008/corec	learing/]								
Name	NoFeesOnCorpActionTrades									
External Ref.										
Comment										
Groups	ANY									
Criteri	a									
Attribute		Criteria		Filter Value(s)						
KEYWORD.Tra	deClassification	▼ NOT_IN	Add	ASSIMILATION						

### 4. NoFeesOnLiquidationTrade

🛃 Static Dat	a Filter Window [15000	18/coreclearing/]								
Name	NoFeesOnLiquidationTra	loFeesOnLiquidationTrade								
External Ref.										
Comment										
Groups	ANY	ANY								
Criteri	a									
Attribute		Criteria		Filter Value(s)						
KEYWORD.Ter	minationType	V NOT_IN	Add	Add CloseOut						

### 5. ExercisedOptionNULL

Name	ExercisedOptionNULL							
External Ref.								
Comment								
Groups	ANY	INY						
Criteria	a							
Attribute		Criteria		Filter Value(s)				
EYWORD.ExercisedOption		TIS NULL	Ĩ.					

#### 6. NoFeeInternal

Name	NoFeeInternal								
External Ref.									
Comment									
Groups	ANY	NY							
🏹 Criteria	a								
ttribute		Criteria	Filter Va	lue(s)					
EYWORD.Internal		VINOT LIKE	▶ true	▶ true					

# 21.9 Billing Date Rule

Example End of Month billing rule

Name	BILLING SETTLEMEN	গা	Type RELATIVE -
Day	0 Add	Days 1	WeekDay NONE -
Month	JAN	<b>~</b>	Rank NONE -
Sel	ect All	UnSelect All	Date Roll END_MONTH -
🗌 Jan	Feb Mar		
Apr	May Jun	Add Relative Months 0	O Bus O Cai Dus Days
🗌 Jul	Aug Sep	Relative Type:	Holidays EUR
Oct	Nov Dec	Absolute	🔽 Check Holiday
Rel Descri	ative BILLING PERIC	D	8005
	_	Generate	

# 21.10Trade + Fees Examples

Example of set-up and results

Trade with

- Client Commission, via FeeConfig
- Client Exchange Fees, via RELATED\_FEE from CtPty, with fee date = trade date (05/10/2016)
- Counterparty Fee, via FeeConfig, with fee date = end of month (01/11/2016)

Find Property	1	🛛 🖊 Trade Fees [	etails											
Strategy Name	Future									_				_
Price	Price	Tuno			v _		oo Dato	06/10/2016						
Save	Save	Type	ADJUSTMEI		u •		ee Date	00/10/2010						
Solve	Don't Solve	Amount		0 EU	R 🔻	St	art Date	06/10/2016						
Book	FCM1						and Darks	0014012040						
Trade Date	05/10/2016	Manual An	ount	With Over	ride	E	nd Date	00/10/2010						
Client Account	ABC STD 001 (6317)	r i			1	Leg	al Entity							
Counterparty	EUREX CLEARING	Method	IONE	•	?									
Counterparty Account	EUREX A1 (6309)	Input		0.00	alc	Know	wn Date							
Executing Broker		input				Des	cription							
Product ID		Role	CounterParty	-										
Exchange	EUREX													
Settle Ccy	EUR	Generate			Modify	Rom		Automatic Foo						
🗄 Contract	XEUR-1COF-F				wouny	Kenn		Automatic rees						
SVN			2.1	<b>CI 1 D 1</b>	E de la			Level E-Mar	D D	K. D. L			5 (	P. I.
Contract Date	Nov 16	Type /	Date los (source	Start Date	End Date	Currency	Amount	Legal Entity	Рау/кес	Known Date	Method	Input	External Id	Role
Buy/Sell	Buy	EXCHANCE FEE	05/10/2016	05/10/2016	05/10/2016	EUR	4.8	ABC123	REC		FeeGrid	0	13506	Client
Quantity	12	EXCHANGE FEE	01/11/2016	01/11/2016	01/11/2016	EUR	-1.8	EUREX CLEARING	PAY		FeeGrid	0	15300	CounterParty
Price	25.0000									1	P	-		
Contract Size	100													
Trade Id	52901													
er 1	VED TETED													

### Client COMMISSION FeeConfig

🔀 Fee Config	Counterparty lies	a sin front config		_						
🔊 O 😫 🖬 🖷	E? 💀									
Edit Browse										
References		Filtering		<b>ö</b> -	Formula					
Config ID Name	22793 ALL Eurex Commission	Filter Category	Client Comm		寻 Add 🤌	Edit 🛓	Delete			
Config Type	Trade Fee	Legal Entity	ALL		Min Amt		Max Amt	Min Days	Max Days	Formula
Rule Type Scale By Range by Tenor Range by Residual Tiered Event Type Fee Currency Day Count Effective From Effective Tom	Volume Quantity Mat Trade	Role Fee Type Exchange Product Type SD Filter Future Contract Future Option contract ETO contract Contract group	Client COMMISSION			C		∞0	18000	0.4°Quantity
Description Rebate		Attributes		4 ×						

Trade Quantity = 12 @ 0.4 = 4.8, to 'REC' receive from the client.

### Counterparty EXCHANGE\_FEE FeeConfig (replicating the Eurex Fee Structure)

-									
📕 Fee Config									
🗊 🕒 😫 🖶 🐚	💀 📷								
Edit Browse									
References		Filtering	÷ -	Formula					
Config ID	26004	Filter Coltaners	Menual Case						
Name	XEUR_1COF-F	Filter Category	Manual rees	Lap Add 🌽	cuit LX Delete				
Config Type	Trade Fee	Filters	ALL	Min Amt	Max Am	t 1	Min Days	Max Days	Formula
Rule Type	Volume	Role	CounterParty		0	2 000 0	an bays	19000	0.1E8Oueebbu
Scale By	Quantity	Fee Type	EVCHANCE FEE	-	2,000	2,000 0		18000	-0.15 Quantity
Range by Tenor		Exchange			2,000			10000	-0.05 Quantity
Range by Residual	Mat 📃	Exchange Catagory							
Tiered		Extrange Category		-					
Event Type	Trade	Future Contract	+						
Fee Currency		FTO contract		-					
Day Count		Elocontract							
Effective From	19/11/2014	Contract group							
Effective To		Attributes	-+ ×						
Description	Set-up manually			-					
Rebate									
Rebate									

Trade Quantity = 12 (Tier 1, quantity less than 2000) Trade Quantity = 12 @ 0.15 = 1.8, to 'PAY' to the Counterparty

#### **Client EXCHANGE FEE**

No FeeConfig, Fee Grid with RELATED\_FEE to the Counterparty EXCHANGE\_FEE

With Calculator = FeePercentage, Amount = -100 to reverse the REC/PAY

de ree Grid Billing G	rid Browse						
Grid Id	135	06		Round Turn			
Processing Org	ALL		]	WithHoldingTax	ſ	🔀 Fee Grid Attributes Wi	ndow
Legal Entity	ABC123		Role	Client 👻		Name	Value
Fee Type	EXCHANGE FEE	-	SD Filter	NoFeesOnCashORPhysicalExCorpAction		AdjustmentRelatedFees	Value
		-				DateRuleName	
Valid from			Valid to			FEE_PAYREC	
Exchange	ALL		]		- 1	RELATED FEE	EXCHANGE F
Deaduate			, ]	ANIX		RelatedFeeCheckRole	false
Products	G.ETD		J	ANT		RelatedFeeRecomputeDate	true
Security			Lag	0 Bus - NO_CHANGE	-	TRADE_DATE_TYPE	TRADE DATE
Fee Details			,			ZeroAmount	true
Amount	-100			Attributes			
Description COP	PY EXCHANGE FEE						
		•				Apply Ref	fresh

### 1.8 to REC from Client

For additional information on fee configuration, please refer to the general *Calypso Fee User Guide*.

# **Section 22. Exercise and Assignment Process**

## 22.1 New Product Selector Field

Allows user to select a specific product by choosing the Put/Call indicator, Strike, SVN and Expiration for an option which is listed under the contract selected in the Contract field.

A contract must be selected first, only products under that contract can be selected.

The selector should give the user a list of products based on the options that are saved in the database.

The list should be displayed in a format that shows "Put Call indicator/Strike/SVN/Contract Month" as shown below.

- The strike is displayed in the format and to the decimal precision of the ETO contract or to the underlying Future Contract for a Future Option
- The SVN is displayed by putting the SVN after "SVN", for instance SVN0, SVN1, etc
- The Contract Month is shown as a 3 letter month and 2 digit year based on the naming convention of the product

Z Future Option/Exchange Traded	Option Exercise/Expiry									• ×
Report Data Market Data Auto	Exercise	vercise								
Search Fields	Results	suits								
		Book	Counterparty	Strike	Underlying Value	Exercise Type	Option Type	Quantity	Exercise	Exercise Q
Process Date:	/PUT/115/SVN0/01/15/2016	Exane Clearing	Newedge Clearing	115.0000000	113.00000000	American	PUT	-20		
12/16/2015 4:01:16 PM										
Action :										
Assign 👻										
Trade Filter:										
Exane Cleared Positions 🔹										
Liquidation Keys:										
•										
Contracts										
VCPO RUD O										
xcb0-b00-0										
Product										
PUT/115.00/SVN0/JAN 16 -										
PricingEnv:										
default 👻										
Indude Expired										Þ
Clear Load				м	arket Datas	<ul> <li>Auto Exercis</li> </ul>	e •	Ap	yk	Cancel

Pro Rata

### 22.2 Select Assign - Random or Pro Rata in the Auto Exercise feature

The Assignment menu is nested, so that All, Random and Pro Rata are second level choices under the Assign menu choice.

Action :			
Assign 👻			
Trade Filter:			
Exane Cleared Positions -			
Liquidation Keys:			
Name: ETD Key 🗸			
Contract:			
-			
PricingEnv:			
default 👻			
Include Expired			
	۲. III III III III III III III III III I		
Clear Load	Market Datas	Auto Exercise	
		All	
		Exercise	
		Assign 🕨	Ali
		Expiry	Random

- Assign Random Processing
  - Can only be chosen if a single product is selected in the Product Field, since you will be required to give an
    assignment quantity per product. A product is a specific option contract, strike, put/call indicator, SVN and expiry.
    If a product is not selected, pop up a message saying "You must select a product on which to apply the assignment
    process."

Z Future Option/Exchange Traded Option Exercise/Expiny										
Report Data Market Data Auto	Report Data Market Data Auto Exercise									
Search Fields	Results									
Deserve Date:		Book	Counterparty	Strike	Underlying Value	Exercise Type	Option Type	Quantity	Exercise	Exercise Q
Process Date:	/PUT/115/SVN0/01/15/2016	Exane Clearing	Newedge Clearing	115.0000000	113.00000000	American	PUT	-20		
12/10/2015 4:01:10 PM										
Action :										
Assign 👻										
Trade Filter:										
Exane Cleared Positions -										
Liquidation Keys:	Co	ntract an	d Product fi	elds						
-		ist he nor	ulated to t	rigger						
·		ndom or r	vro rata	15501						
Contract:			101ata							
XCBO-BUD-O 💌										
Product	1									
PUT/115/SVN0/02/19/2016 -										
PricingEnv:										
default 👻										
Induda Evoired										
nouse cybien							1			•
Clear Load				м	arket Datas	<ul> <li>Auto Exercis</li> </ul>	e 🔹	App	oly	Cancel

- Pop up window prompting the user to enter the quantity to randomly assign across the short positions/trades that have been loaded. Once a quantity is loaded the user will click 'OK' to process.

The Quantity must be equal to or less than the total quantity of all short positions loaded in the window. If the quantity is greater, the user should be prompted to enter a different quantity with a message that says "The entered assignment quantity exceeds the available lots to exercise. Please enter a valid quantity."

If the quantity is equal to or less than the total quantity of all short positions loaded in the window proceed to assign the quantity according to the random assignment algorithm logic described later in this document.

<b>\$</b>	23
Please enter the quantity to assign	35 OK Cancel

- Assign Pro Rata
  - Can only be chosen if a single product is selected in the Product Field, since you will be required to give an
    assignment quantity per product. A product is a specific option contract, strike, put/call indicator, SVN and expiry.
    If a product is not selected, pop up a message saying "You must select a product on which to apply the assignment
    process."
  - Pop up window prompting the user to enter the quantity to pro rata assign across the short positions/trades that have been loaded. Once a quantity is loaded the user will click 'OK' to process.

The Quantity must be equal to or less than the total quantity of all short positions loaded in the window. If the quantity is greater, the user should be prompted to enter a different quantity with a message that says "The entered assignment quantity exceeds the available lots to exercise. Please enter a valid quantity."

If the quantity is equal to or less than the total quantity of all short positions loaded in the window proceed to assign the quantity according to the pro rata assignment algorithm logic described later in this document.

<b>4</b>	22
Please enter the quantity to assign	35
	OK Cancel

### 22.3 Eurex Random Assignment Algorithm

A single random algorithm, based on the official EUREX one, will be used in all Calypso random assignment processes (G-API Eurex Interface, Broker file Interface and Exercise/Assignment screen).

For each assignment instruction received, we need to:

- Identify the scope of end accounts potentially impacted with Sell Open positions
- Count for that scope of accounts the number of open contracts of all the short positions.
- Sort Open contracts per account id and give to each a number between 0 and [number of open contract -1]
- Calculate the Assignment Interval: Number of open contract / Quantity to be assigned
- Determinate the first contract to Assign:
  - Generate a random number between 0 and 1 (bigger than 0 and smaller than 1)
  - Multiply this number by the Assignment Interval
  - First contract place is given by the integer part of this number. This contract is assigned
  - Store the number (with decimal) to a pointer
- Process the remaining Assignments:
  - The pointer each time is increased by the value of Assignment Interval
  - Next contract place is then given by the integer part of this pointer
  - Repeat until all assignments are processed

#### Example:

We receive an assignment, with a quantity of 11 on a specific product and counterparty account. For that counterparty account, we have 6 end-client accounts with the following short positions that we must sort to give a number to each contract:

Client	Nb of Short	Contract Places			
Act	Short)	From	То		
ACT1	3	0	2		
ACT2	5	3	7		
ACT3	10	8	17		
ACT4	8	18	25		
ACT5	20	26	45		
ACT6	11	46	56		
Total	57				

- The Assignment interval is: 57/11=5.181818...
- We generate a random number: 0.778177764
- Based on that, the pointer is: 5.181818\*0.778177764 = 4,032375689
- First contract place is 4 (ACT2 is assigned for 1)
- Then we add Assignment interval, obtain the new pointer and new place, and so on...

Assignment steps:

Remaining Qty	Step	Pointer	Place	Client Act
11	First	4,032376	4	ACT2
10	Next	9,214194	9	ACT3
9	Next	14,39601	14	ACT3
8	Next	19,57783	19	ACT4
7	Next	24,75965	24	ACT4
6	Next	29,94147	29	ACT5
5	Next	35,12328	35	ACT5
4	Next	40,3051	40	ACT5
3	Next	45,48692	45	ACT5
2	Next	50,66874	50	ACT6

1 Ne	ext 55	5,85056	55	ACT6
------	--------	---------	----	------

And which gives the following assignment result:

Client Act	Nb of Short Contracts	Contract Pla	Qty	
	(Qty Short)	From	То	Assigned
ACT1	3	0	2	0
ACT2	5	3	7	1
ACT3	10	8	17	2
ACT4	8	18	25	2
ACT5	20	26	45	4
ACT6	11	46	56	2
Total	57			11

Once the EUREX algorithm has computed the quantity to assign per client account, we rely on our standard process to create the "Close Out" transactions per open trades constituting the short client account balance to assign.

A detailed explanation is presented below.

Client Act	Nb of Short Contracts (Qty Short) Before Assign
ACT1	3
ACT2	5
ACT3	10
ACT4	8
ACT5	20
ACT6	11
Total	57

Act	Nb of Short Contracts (Qty	Contrac	Qty	
	Short)	From	То	Assigned
ACT1	3	0	2	0
ACT2	5	3	7	1
ACT3	10	8	17	2
ACT4	8	18	25	2
ACT5	20	26	45	4
ACT6	11	46	56	2
Total	57			11

Before Assign			CloseOutTrade			After Assing	
ACT1	Toq	Trade Id	Trade Id	Qty	ExercisedOption	Toq	Trade Id
	1	1				1	1
	2	2				2	2
Total Qty	3					3	
ACT2	Toq	Trade Id	Trade Id	Qty	ExercisedOption	Toq	Trade Id
	2	3	15	1	3	1	3
	3	4				3	4
Total Qty	5					4	
АСТЗ	Toq	Trade Id	Trade Id	Qty	ExercisedOption	Toq	Trade Id
	1	5	16	1	5	0	5
	5	6	17	1	6	4	6
		6				4	ь
	4	7				4	7
Total Qty	10					8	
ACT4	Toq	Trade Id	Trade Id	Qty	ExercisedOption	Toq	Trade Id
	1	8	18	1	8	0	8
	7	9	19	1	9	6	9
Total Qty	8					6	
ACT5	Toq	Trade Id	Trade Id	Qty	ExercisedOption	Toq	Trade Id
	14	10	20	4	10	10	10
	6	11				6	11
Total Qty	20					16	
ACT6	Toq	Trade Id	Trade Id	Qty	ExercisedOption	Toq	Trade Id
	1	12	21	1	12	0	12
	1	13	22	1	13	0	13
	9	14		1	13	9	14
Total Qty	11					9	
	57			11		46	

### 22.4 Pro Rata Assignment Algorithm

Pro Rata assigns options across Client Accounts in proportion to the quantity of each Account's open short position, with Accounts holding the largest positions receiving the highest proportion of assignments. If this algorithm is run before buys and sells are liquidated, it will take all open short trades into account even if there are offsetting option purchases in that account, so it is recommended to run the liquidation process prior to assigning the options.

The Pro Rata logic works as follows:

- 1. Determine the set of trades which are eligible for assignment based on the settings of the Assignment UI.
- 2. Determine the number of lots to be assigned, which we'll call the Total Assignment Qty.
- 3. Aggregate the open trade quantities of these transactions by Client Account to get the *Client Account Open Qty* for each Client Account.
- 4. Sum all of the open trade quantities across all accounts to get the Total Open Qty
- 5. Calculate the *Client Account Assignment Qty* for each account with the formula

Client Account Assignment Qty = Total Assignment Qty \* (Client Account Open Qty/Total Open Qty)

- 6. Round the calculated quantities to the nearest integer and sum the rounded quantities
  - If the sum of the rounded quantities is equal to the Total Assignment Qty go to Step 7
  - If the sum of the rounded quantities is less than the Total Assignment Qty, calculate the difference "D". Then increment the quantity of "D" accounts by 1, starting with the Account with the highest Client Account Open Qty, then going to the account with the second highest, then third highest...and end with the "D<sup>th</sup>" Account. Store the incremented Client Account Assignment Qty's and go to Step 7.
  - If the sum of the rounded quantities is more than the Total Assignment Qty, calculate the difference "D". Then decrement the quantity of "D" accounts by 1, starting with the Account with the highest Client Account Open Qty, then going to the account with the second highest, then third highest...and end with the "D<sup>th</sup>" Account. Store the decremented Client Account Assignment Qty's and go to Step 7.
- 7. For each Client Account, we will assign the number of lots equal to the Client Account Assignment Qty calculated in Step 6 on a trade by trade basis starting with the trade with the lowest trade id.
  - If the Client Account Assignment Qty is less than or equal to the Open Trade Quantity of the trade with the lowest trade id, populate the Assignment Quantity field for that trade with the Client Account Assignment Qty value, check the Assign box for that trade and move to the next account.
  - If the Client Account Assignment Qty is greater than the Open Trade Quantity of the trade with the lowest trade id
    - i. populate the Assignment Quantity field for that trade with the Open Trade Quantity and check the Assign checkbox
    - ii. calculate the Remaining Client Account Assignment Qty by subtracting that trade's Open Trade Quantity from the initial Client Account Assignment Qty
    - iii. repeat Step 7 for the same account using the Remaining Client Account Assignment Qty and the next lowest trade id for the account.
    - iv. Repeat this process until the sum of the Assignment Quantities across all eligible trades in this account is equal to the original Client Account Assignment Qty, then move to the next account.
- 8. Once all of the Assignment Quantities have been assigned for all accounts, the user can then click the Apply button to execute.
  - At this point we require that the Assign checkbox is only checked for trades with an Assignment Quantity value populated, and that the sum of the Assignment Quantity values across all trades is equal to the Total Assignment Qty entered by the user.
  - If the user selects a different assignment method from the menu before clicking 'Apply', the assignment quantities will be reset and recalculated according to that method's logic.