HAZELTREE

Collateral Manager Guide

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INTRODUCTION

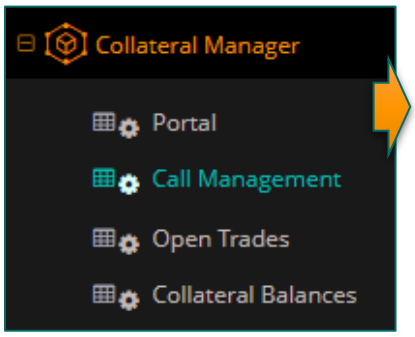
Collateral Manager© is a **Hazeltree©** module designed as a collateral and exposure management solution for the buy-side. Collateral Manager enabled clients to manage margin calls, control collateral balances, aggregate derivative instruments' collateral values per Account, monitor counterparties, and mitigate risk and minimize capital encumbrance across uncleared OTC and bilateral repo transactions.

COLLATERAL MANAGER KEY FEATURES

- ✓ *Support for schedule-based regulatory initial margin calculations*
- ✓ *Validate both sides of margin calls to reduce exposure and optimize alpha*
- ✓ *Workflow allows for both posting and collecting collateral to meet regulatory obligations*
- ✓ *Support for all three industry-standard approaches for managing IA vs IM*
- ✓ *Instruct collateral movements as pledging party or secured party for third-party accounts*
- ✓ *Utilize regulatory threshold across accounts to minimize the need for collateral posting*
- ✓ *Support for the Hazeltree Optimizer algorithmic engine to optimize OTC collateral balances*

INFO! Collateral Manager is a preferred vendor and certified partner of third-party message platform **Acadiasoft©**. Collateral Manager fully integrates with the Acadiasoft Messaging API.

Collateral Manager module contains four screens:



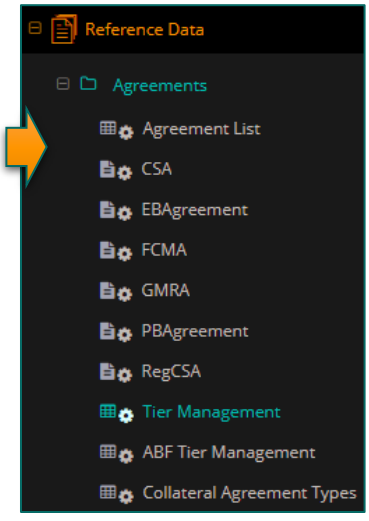
- Portal: start page that contains a collection of collateral widgets.
- Call Management: management screen that aggregates Collateral Accounts' details and allows to manage margin calls.
- Open Trades: contains a grid with traded derivative securities.
- Collateral Balances: contains a grid with collateral positions.

Collateral Manager engine is not limited with these four screens only; additionally to the main kit, Collateral Manager also utilizes other tools across the Hazeltree application: *Optimizer, Reference Data*.

INFO! Collateral Manager screens and instruments are based on the **Collateral Agreements** entities. Collateral Agreements are located and managed in *Reference Data module*.

COLLATERAL AGREEMENTS

Collateral Agreements are a part of client private business data, managed through Reference Data module. To access Agreements section, proceed to the *Reference Data module > folder Agreements*.



> *Term:* **Agreement** is a Hazeltree entity that regulates financial relations between Hazeltree client and Counterparty side per one Account. Agreement contains a set of parameters that define all aspects of established business agreement between two parties.

There are five available types of Collateral Agreements:

- **CSA**: Credit Support Annex

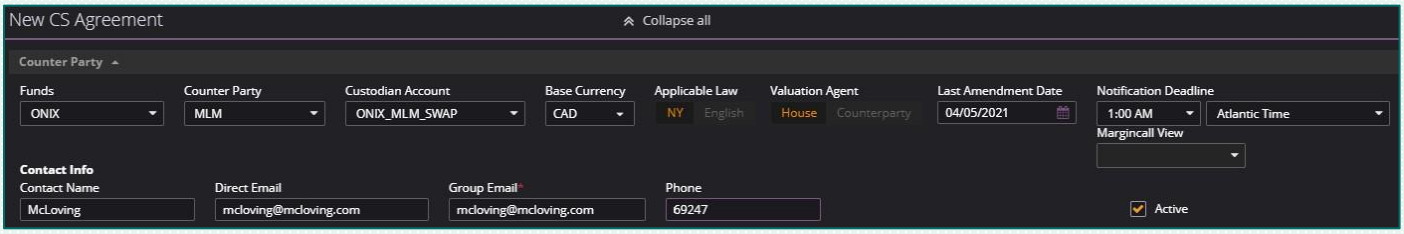
- **SCSA**: Standard Credit Support Annex
- **GMRA**: Global Master Repurchase Agreement
- **FCMA**: Futures Clearing Merchants Agreement
- **UMR**: Uncleared Margin Rules Agreement *(proceed to dedicated chapter to learn more about UMR (also called Regulatory) Agreements)*

NOTE! It is possible to have only one active Agreement for one Account.

IMPORTANT! Active Agreements are essential for Collateral Manager operations as they define the established rules between two parties which impact calculation methods of Collateral values. It is impossible to start collateral management inside the Collateral Manager module without configured Agreements.

EXAMPLE

User Allen Wake is going to start using Collateral Manager in order to regulate collateral relations of fund **ONIX** with Counterparty **MLM**. User creates a new **CSA Agreement**, specifies all parameters that respect the conditions established between these two parties:



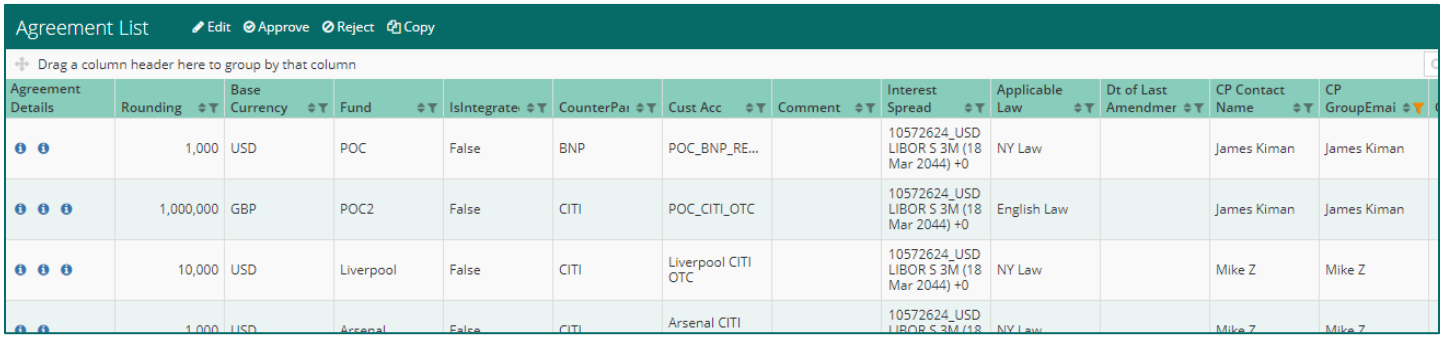
When Agreement is approved, it becomes possible to receive Feed files from both parties and convey extracted data to Collateral Manager screens: *Call Management* and *Collateral Balances*. For example, the data received from the Fund accounting system is conveyed to *Call Management* screen. Now Allen Wake is able to control collateral values and manage margin calls:

As can be seen, the Agreement created an entry on the Call Management screen: it is now a basis for collateral management in frames of the deal between two particular counterparties.

NOTE! When Collateral Agreement of any type is created, it requires a subsequent approval from another user, authorized to approve or reject Agreements. Only approved Agreements come in force.

AGREEMENTS LIST

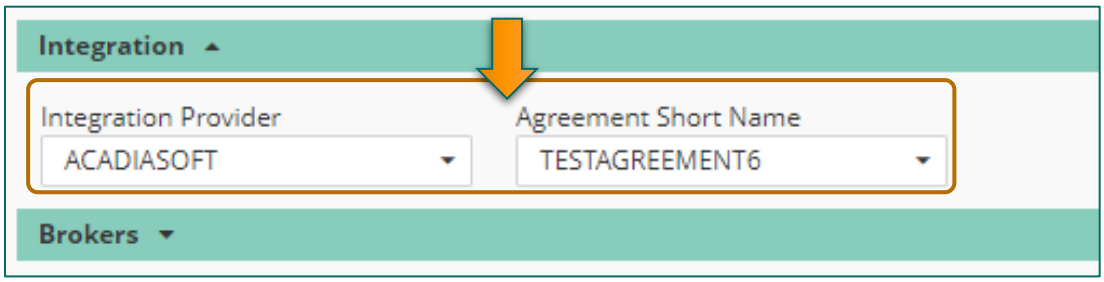
All Agreements are kept in an aggregative grid under the same Agreements folder. Accessed it via following path: *Reference Data module > Agreements > Agreement list*. Agreements can be edited and deactivated:



INTEGRATED AGREEMENTS

Collateral Agreements can be associated with the third-party platform **Acadiasoft** if the platform integration is set up for Hazeltree Collateral Manager. Acadiasoft integration enhances the process of margin call for the Agreement's Account.

To pick integration provider for specific Agreement proceed to the Agreement creation/editing screen and scroll down for section ***Integration***:



> *Term:* **Agreement Short Name** is an Agreement name on the Acadiasoft platform side. The dropdown is populated with the list of existing Acadiasoft Agreements. **WARNING!** Be accurate when selecting corresponding Acadiasoft Agreement. Mismatch can lead to inconsistency in margin call processes.

Select integration provider and Agreement Short Name in the Integration section to establish a connection between Hazeltree and Acadiasoft for particular Agreement. This option is only available with Acadiasoft platform integrated with Hazeltree.

ACADIASOFT INTEGRATION

Acadiasoft© is a third-party message platform that manages margin calls. Hazeltree Collateral Manager is a preferred vendor and certified partner of Acadiasoft. Acadiasoft and Acadiasoft Messaging API can be integrated with Collateral Manager module.

Integration with Acadiasoft enhances margin call process and changes the workflow for Collateral Accounts associated with Acadiasoft. Acadiasoft integration does not require all existing Accounts to be associated with Acadiasoft. It is possible to manage integrated and non-integrated Collateral Accounts on one screen simultaneously. For non-integrated Collateral Accounts, margin calls and pledges are processed via email.

NOTE! The system allows users to create Integrated Agreements strictly when Acadiasoft platform is integrated with Collateral Manager.

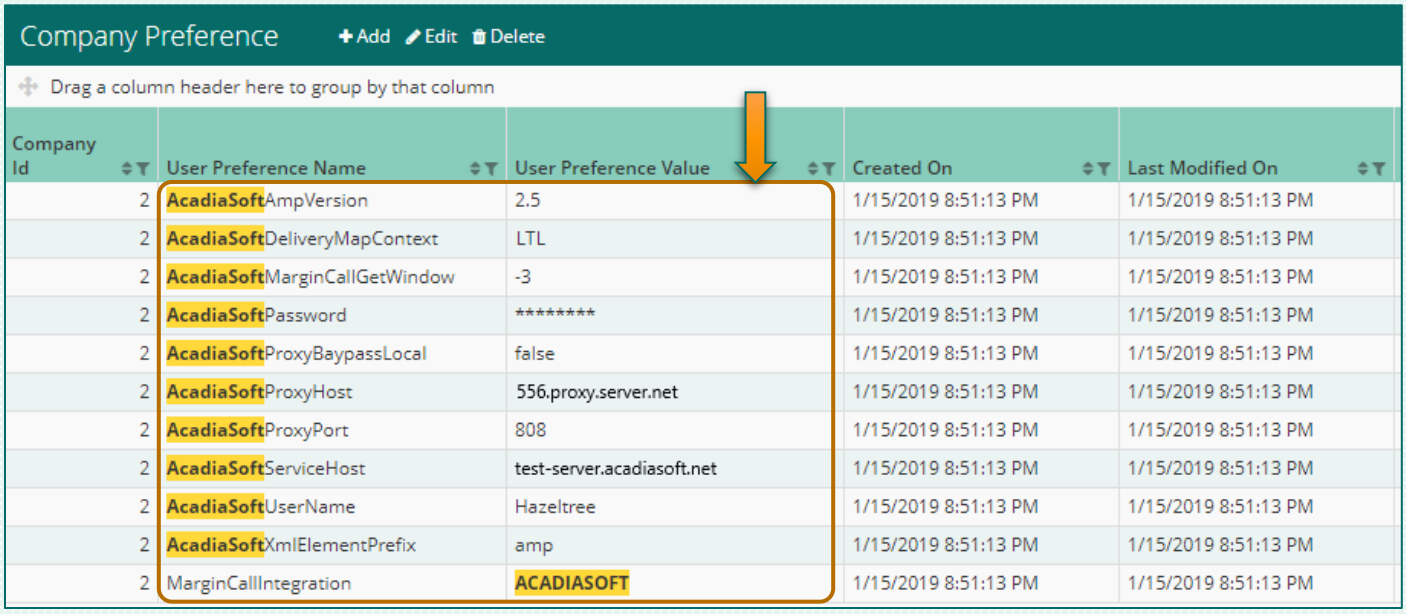
ACADIASOFT INTEGRATION SETUP

Acadiasoft integration setup is a complex process that requires various preparation steps which must be performed by Hazeltree experts. Preparation steps include:

- whitelisting of servers' IP addresses on Acadiasoft side
- modifying internal configuration files
- conducting connection tests.

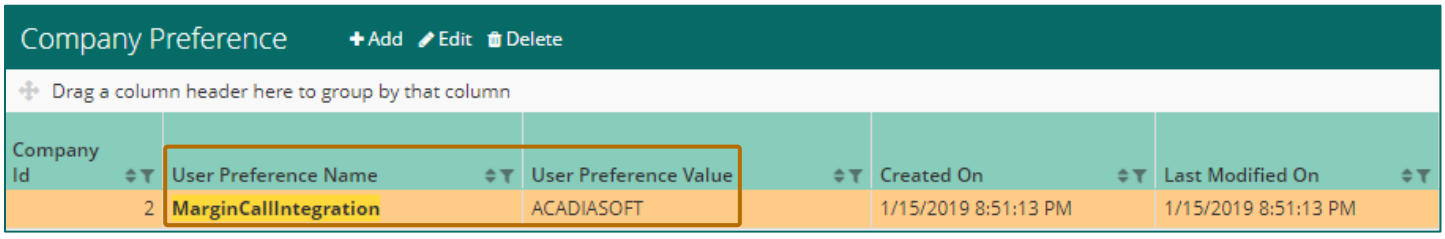
IMPORTANT! Always refer to Hazeltree Technical Support team with intention to establish Acadiasoft integration.

Accurate Acadiasoft integration also requires specification of internal Hazeltree settings: *Company Preferences*. They must be specified by Hazeltree Technical Support team as well. Modifying Company Preferences with no experience can lead to Acadiasoft integration failure.



Company Id	User Preference Name	User Preference Value	Created On	Last Modified On
2	AcadiaSoftAmpVersion	2.5	1/15/2019 8:51:13 PM	1/15/2019 8:51:13 PM
2	AcadiaSoftDeliveryMapContext	LTL	1/15/2019 8:51:13 PM	1/15/2019 8:51:13 PM
2	AcadiaSoftMarginCallGetWindow	-3	1/15/2019 8:51:13 PM	1/15/2019 8:51:13 PM
2	AcadiaSoftPassword	********	1/15/2019 8:51:13 PM	1/15/2019 8:51:13 PM
2	AcadiaSoftProxyBaypassLocal	false	1/15/2019 8:51:13 PM	1/15/2019 8:51:13 PM
2	AcadiaSoftProxyHost	556.proxy.server.net	1/15/2019 8:51:13 PM	1/15/2019 8:51:13 PM
2	AcadiaSoftProxyPort	808	1/15/2019 8:51:13 PM	1/15/2019 8:51:13 PM
2	AcadiaSoftServiceHost	test-server.acadiasoft.net	1/15/2019 8:51:13 PM	1/15/2019 8:51:13 PM
2	AcadiaSoftUserName	Hazeltree	1/15/2019 8:51:13 PM	1/15/2019 8:51:13 PM
2	AcadiaSoftXmlElementPrefix	amp	1/15/2019 8:51:13 PM	1/15/2019 8:51:13 PM
2	MarginCallIntegration	ACADIASOFT	1/15/2019 8:51:13 PM	1/15/2019 8:51:13 PM

Acadiasoft integration must be activated after completing the preparation steps. When you are ready to work with Acadiasoft platform, activate integration by modifying one more Company Preference variable: ***MarginCallIntegration.*** Specify **ACADIASOFT** in the *User Preference Value* field.



Company Id	User Preference Name	User Preference Value	Created On	Last Modified On
2	MarginCallIntegration	ACADIASOFT	1/15/2019 8:51:13 PM	1/15/2019 8:51:13 PM

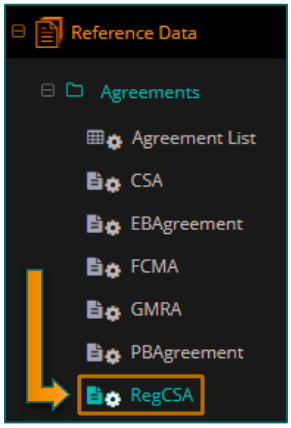
Activation happens instantly and does not need any propagation time. Users are able to work with Collateral Manager and Acadiasoft platform right away.

UMR AGREEMENTS

UMR (Unclear Margin Rules) Agreement is a segregated type of Collateral Agreement designed specifically for regulating unclear margin rules: a new policy introduced to the OTC derivatives market in recent years.

> *Term:* **UMR (Unclear Margin rules)** is a pack of new margin rules for unclear derivates transactions, introduced as a global regulatory agenda covering OTC derivatives market participants. The measurement of determination which participants are in the scope of the UMR is their **ANA**.
>
> *Term:* **ANA (Annual Notional Amount)** is the annual pecuniary sum of all OTC contracts between the company and counterparties. Currently the firms with ANA equal and over 50 billion are in scope of the UMR. Starting with September 2021 the scope will be covering all firms with ANA equal and over 8 billion.

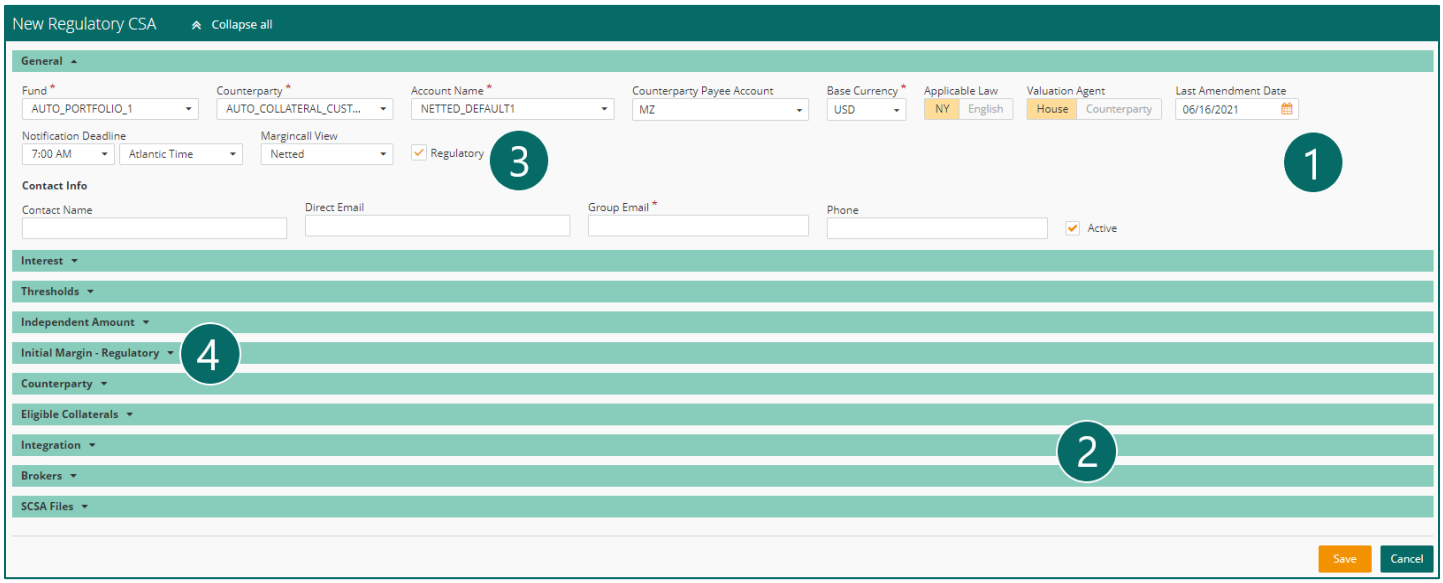
The UMR Agreements has an extra data block that contains regulators for the rules of initial pledge accruals. The UMR Agreements were implemented as a new Agreement type **RegCSA** available in the *Reference Data module > Agreements folder*.



INFO! The UMR Agreements (also can be referred to as ***Regulatory CSA***) designate standard values of **IA** (*Independent Amount* – initial deposit of the collateral position) and **VM** (*Variation Margin* – fluctuating pledge that changes throughout the business day). In addition to these parameters, the Regulatory CSA Agreements also designate an additional ***Initial Margin*** requirement that must be respected from both Fund and Counterparty sides.

The Regulatory Initial Margin value is determined with the Contract established between both parties, the size of the IA, the SIMM value that can be sent by the Broker. **NOTE!** It is critical to notice that Regulatory Initial Margin requires new segregated Accounts (*Pledged Account* for the Fund side and *Secured Account* for the Counterparty side).

The user interface of the Regulatory CSA is reviewed below:



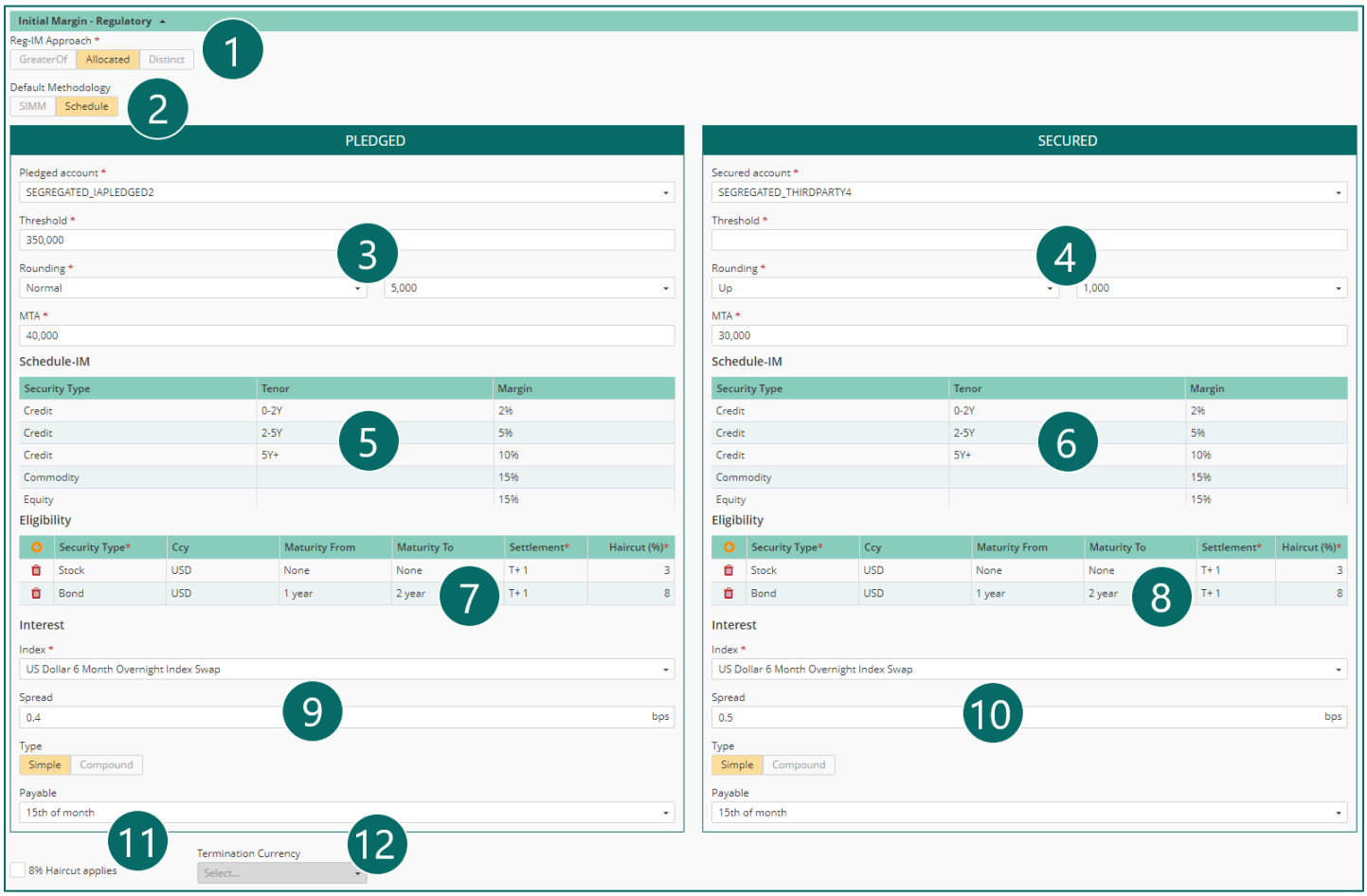
1. **General parameters**: section contains standard set of CSA Agreement parameters plus the Regulatory checkbox (**3**).
2. **List of settings groups**: standard set of CSA parameters groups with one extra option Initial Margin Regulatory (**4**).
3. **Regulatory checkbox**: mark the checkbox to assign the Regulatory type to the CSA Agreement. The Initial Margin Regulatory (**4**) section will emerge automatically.
4. **Initial Margin Regulatory**: section contains options that determine the Regulatory Agreement *Approach*, *Default Methodology*, *Pledge* and *Secured Accounts* and other UMR parameters.

INFO! The Initial Margin Regulatory settings determine the structure of the Margin call by picking the *Reg-IM Approach* and *Default Methodology* of calculating the Initial Margin values. Aside of that, the Agreement interface shows the same settings identical to the standard CSA Agreements.

UMR AGREEMENTS: INITIAL MARGIN REGULATORY

UMR (*Uncleared Margin Rules*) must be set up in inside the Agreement in order to regulate the calculation method and size of the Regulatory Initial Margin values for both Fund and Counterparty sides. Proceed to the section of parameters **Initial Margin Regulatory** and expand it.

The Initial Margin Regulatory section is reviewed below:



1. **Reg-IM Approach**: identify the Approach to the Regulatory Margin call account structure (*Greater Of*, *Allocated*, or *Distinct*).
2. **Default Methodology**: identify the Methodology of the Margin call calculation (*Standard Initial Margin Model* files or *Schedule*).
3. **Pledge Account settings**: select *Pledged Account*, specify *Threshold*, *Rounding* and *Minimum Transfer Amount* for the Fund side (Pledged).
4. **Secured Account settings**: select *Secured Account*, specify *Threshold*, *Rounding* and *Minimum Transfer Amount* for the Counterparty side (Secured).
5. **Pledged Schedule-IM**: review the schedule of the Initial Margin across the Security Types for the Fund side (Pledged). The table shows *Tenor* and corresponding *Margin percent* value for the Security Type.
6. **Secured Schedule-IM**: review the schedule of the Initial Margin across the Security Types for the Counterparty side (Secured). The table shows *Tenor* and corresponding *Margin percent* value for the Security Type.

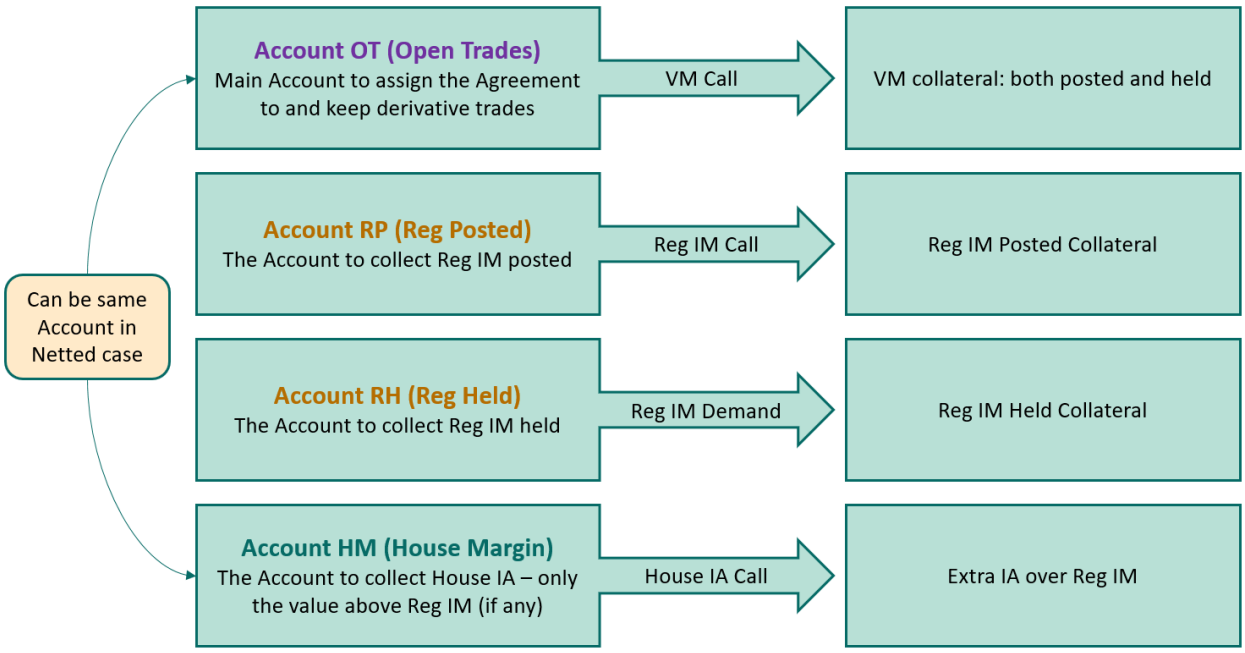
7. **Pledged Eligibility**: add to the Eligibility table of the Fund side (Pledged) side if there are specific Security Types in the frames of the Agreement that demand specific settings.
8. **Secured Eligibility**: add to the Eligibility table of the Counterparty side (Secured) if there are specific Security Types in the frames of the Agreement that demand specific settings.
9. **Pledged Interest**: select the *Interest Index*, *Spread*, *Type* and *Payable period* for the Fund side (Pledged).
10. **Secured Interest**: select the *Interest Index*, *Spread*, *Type* and *Payable period* for the Counterparty side (Secured).
11. **8% Haircut applies**: mark the checkbox if the Haircut of 8% applies to the Agreement. Checkmark activates the Termination Currency dropdown.
12. **Termination Currency**: select the currency for the 8% Haircut setting.

INFO! The first setting (*Reg-IM Approach*) affects the structure and size of the Margin call and must be selected with clear understanding of how the Margin Call process will be arranged for the Collateral position of the RegCSA Agreement.

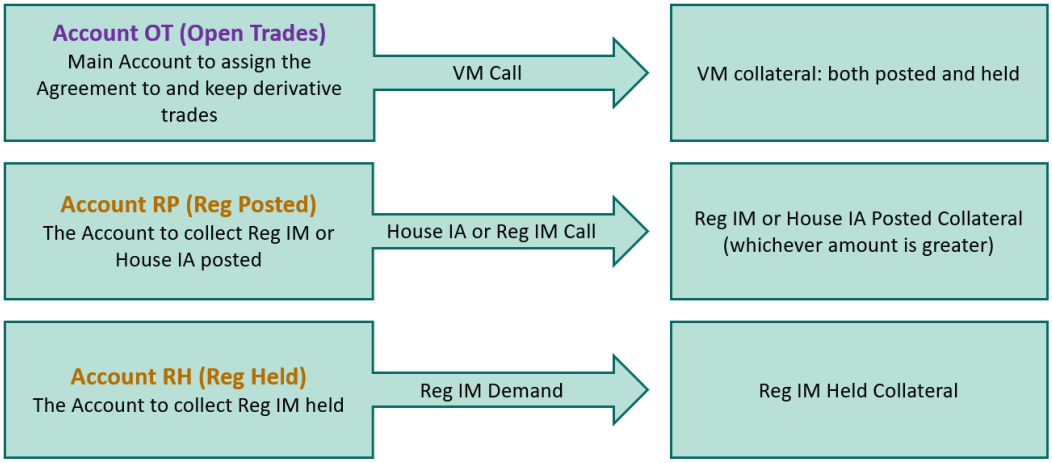
REG-IM APPROACH

Reg-IM Approach setting determines the structure and size of the Margin call. In other words, the Approach specified the workflow of the Margin call: the number and type of Calls and Accounts involved in the Margin call operation. There are three variations of the Reg-IM Approach totally:

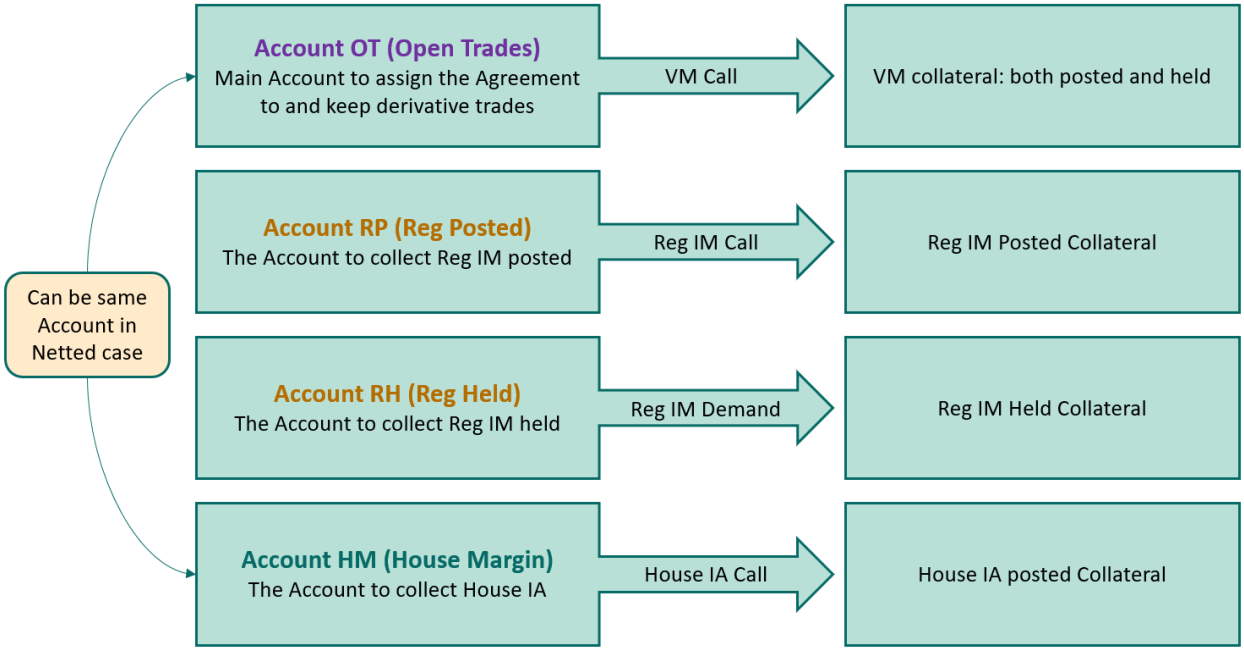
- **Allocated**: Margin call will be issued for *Variation Margin*, *House Independent Margin*, *Regulatory Initial Margin* and *Regulatory Initial Margin Demand* from four Accounts.



- **Greater Of**: Margin call will be issued for *Variation Margin*, *House Independent Margin* or *Regulatory Initial Margin* and *Regulatory Initial Margin Demand* from three Accounts.



- **Distinct**: Margin call will be issued for *Variation Margin*, *House Independent Margin*, *Regulatory Initial Margin* and *Regulatory Initial Margin Demand* from four Accounts.



INFO! The ***Distinct*** Reg-IM Approach is different from the ***Allocated*** in terms of the Call issued from the House Margin Account. In case of *Allocated* Approach, the House Initial Amount Call is issued only if there is an extra Initial Amount over the Regulatory Initial Margin that is required to cover the Margin call sum.

REGULAR MARGIN CALL TERMINOLOGY

- ✓ **Reg IM Posted**: the amount of Regulatory Initial Margin the client needs to post to their Counterparty.
- ✓ **Reg IM Held**: the amount of Regulatory Initial Margin that the client's Counterparty will post to the client.
- ✓ **House IA Posted**: the amount of House Independent Amount the client needs to post to their Counterparty.

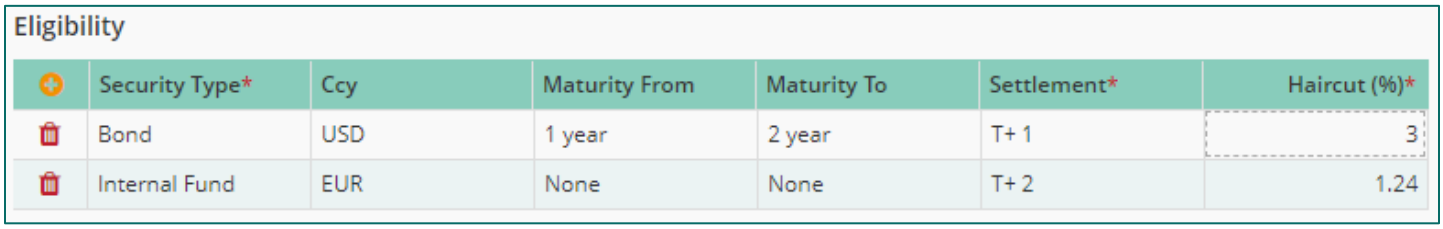
DEFAULT METHODOLOGY

The Default Methodology of the Regulatory CSA Agreement determines the method the Regulatory IA will be calculated. There are two options available:

- ✓ **SIMM file upload**: a methodology script retrieved from the *Standard Initial Margin Model file* uploaded through Collateral Account. **NOTE!** If the Regulatory CSA Agreement is integrated with Acadiasoft, the SIMM file can be sent from Broker from the Acadiasoft side.
- ✓ **Schedule**: manually set up methodology of calculation when Margin calls are calculated on a basis of the Account's trade operations (can be reviewed on the Open Trades screen). The Margin calls depend on the positions risk value, calculating how large of the position should be covered by the Margin call.

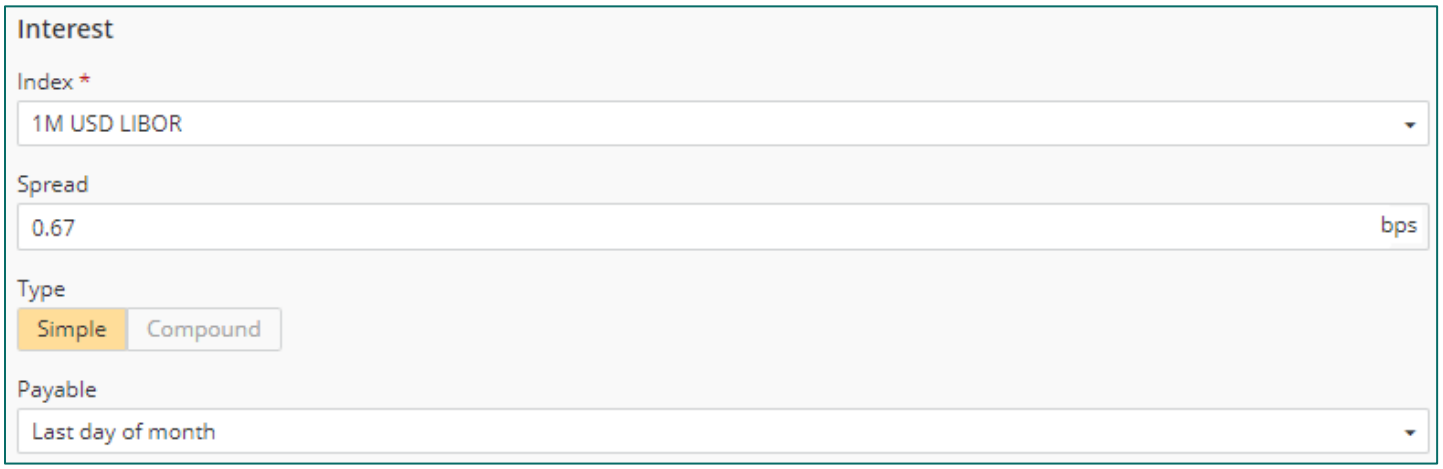
ELIGIBILITY

Eligibility section allows users to specify an unlimited number of eligible Securities that can be used to cover Pledged or Secured sides. Thus, the Fund side can demand to initiate the pledge in Bonds and Internal Funds (see the screenshot below). The Counterparty, in turn, can demand to initiate the pledge in Securities of their own choice:



INTEREST

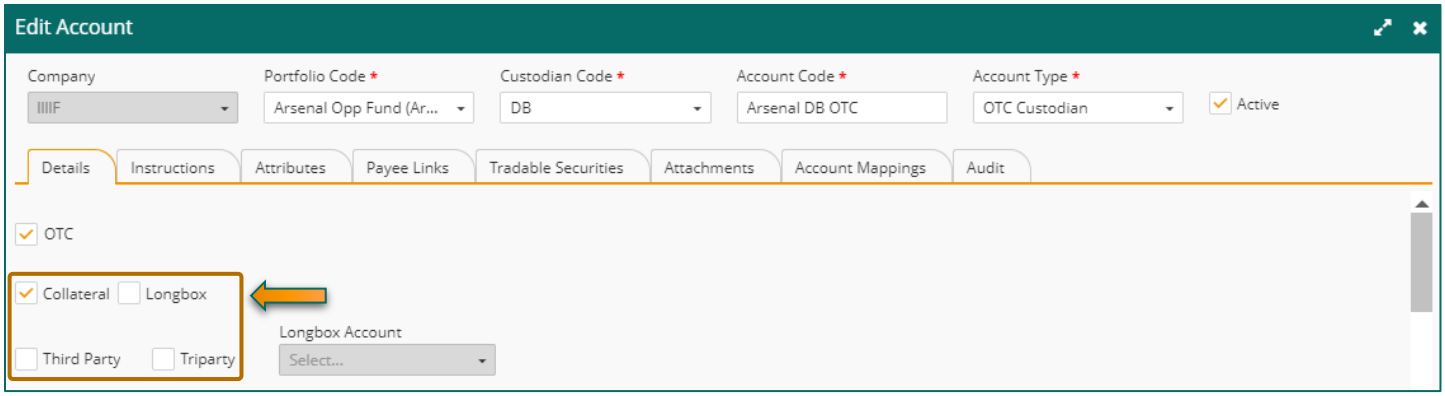
Interest section allows to specify the *Interest Index*, *Spread*, *Type (Simple or Compound)* and *Payable date* of the Interest, accrued from Securities inside the Regulatory Agreement. The accrued Interest is accumulated on the screen ***Interest accruals*** (*Position Management module*) and can be reviewed there:



COLLATERAL ACCOUNT STRUCTURE

Collateral Account structure is determined by the **Account settings** (established in the *Reference Data module*) and **Collateral Agreements** that designate the role of Collateral Account in frame of the Collateral position.

To make an Account Collateral, proceed to the *Reference Data module > Portfolio/Custodian folder > Account screen*. Take an Account on edit and refer to the *Details* tab:



INFO! In order to activate the Collateral checkbox that, when marked, designates the Accounts as Collateral, the checkbox **OTC** must be marked in a first place.

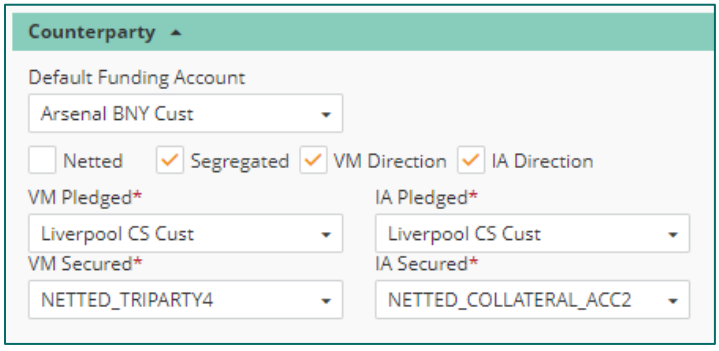
COLLATERAL ACCOUNT SETTINGS

The Account Editor screen (*Details* tab) contains four settings that govern the primary type of the Collateral Account. All four options are concealed unless the **OTC** checkbox is marked. When OTC is checked, four options emerge right under:

- **Collateral**: defines that the Account holds Collateral positions. **NOTE!** Collateral and Longbox parameters cannot be checked simultaneously.
- **Longbox**: defines a special client's Account at the client's custodian bank that holds client's assets which may be pledged as Collateral (normally for Reg IM).
- **Third Party**: defines a Collateral Account that gets Collateral balances from either the client PB account (if it is a Pledge Account) or from the Counterparty (if it is a Secured Account).
- **Triparty**: defines a Collateral Account that gets Collateral positions from the linked Longbox account (linking a Longbox account is not mandatory since the Triparty account may belong to the Counterparty side).

COLLATERAL ACCOUNTS & COLLATERAL AGREEMENTS

Collateral Agreements determine the roles that Collateral Accounts take in frames of Margin call operations. The Agreement user interface allows to specify and demarcate Collateral Accounts according to the nature of the collateral business venture of the Agreement:

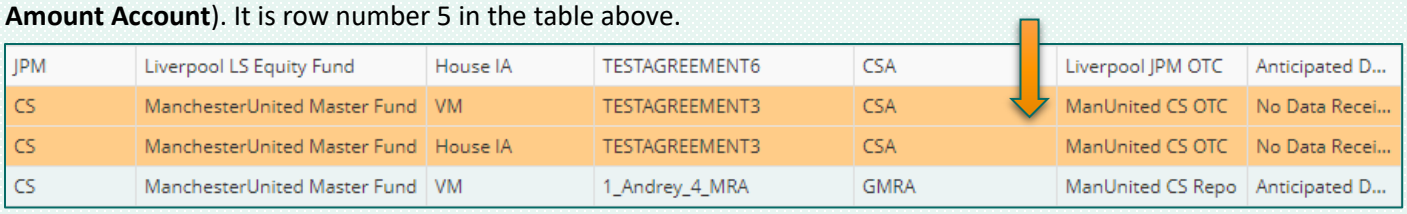


There are several combination that can be applied to the Collateral Account structure in terms of Collateral Agreement. See the table below to learn them all:

Netted	Segregated	Bi-Directional	Account Type	Account Roles	UI display
YES	**NO**	**NO**	Collateral Account	VM Pledged = Collateral Account IA Pledged = Collateral Account VM Secured = Collateral Account IA Secured = Collateral Account	One Account for all
NO	**NO**	**NO**	Collateral Account	VM Pledged = Collateral Account IA Pledged = Collateral Account VM Secured = Collateral Account IA Secured = Collateral Account	One Account for all
YES	**NO**	**YES**	Pledged Account Secured Account	VM Pledged = Pledged Account IA Pledged = Pledged Account VM Secured = Secured Account IA Secured = Secured Account	Pledged and Secured Accounts must be different
NO	**NO**	**YES**	Pledged Account Secured Account	VM Pledged = Pledged Account IA Pledged = Pledged Account VM Secured = Secured Account IA Secured = Secured Account	Pledged and Secured Accounts must be different
NO	**YES**	**NO**	VM Account IA Account	VM Pledged = VM Account IA Pledged = IA Account VM Secured = VM Account IA Secured = IA Account	VM and IA accounts must be different
NO	**YES**	**YES**	VM Pledged IA Pledged VM Secured IA Secured	VM Pledged = VM Pledged IA Pledged = IA Pledged VM Secured = VM Secured IA Secured = IA Secured	All 4 Accounts must be different
NO	**YES**	**IA ONLY**	VM Account IA Pledged IA Secured	VM Pledged = VM Account IA Pledged = IA Pledged VM Secured = VM Account IA Secured = IA Secured	All 3 Accounts must be different
NO	**YES**	**VM ONLY**	VM Pledged VM Secured IA Account	VM Pledged = VM Pledged IA Pledged = IA Account VM Secured = VM Secured IA Secured = IA Account	All 3 Accounts must be different

EXAMPLE

The configuration of Collateral Agreement defines the number of entries you are going to see on the Call Management grid. It is important to understand that they represent one Collateral position from various Collateral Accounts perspective. For example, the screenshot below shows two entries for the Fund for one Collateral position because the Agreement was configured to have Segregated Counterparty Accounts (**Varian Margin Account** and **Independent Amount Account**). It is row number 5 in the table above.

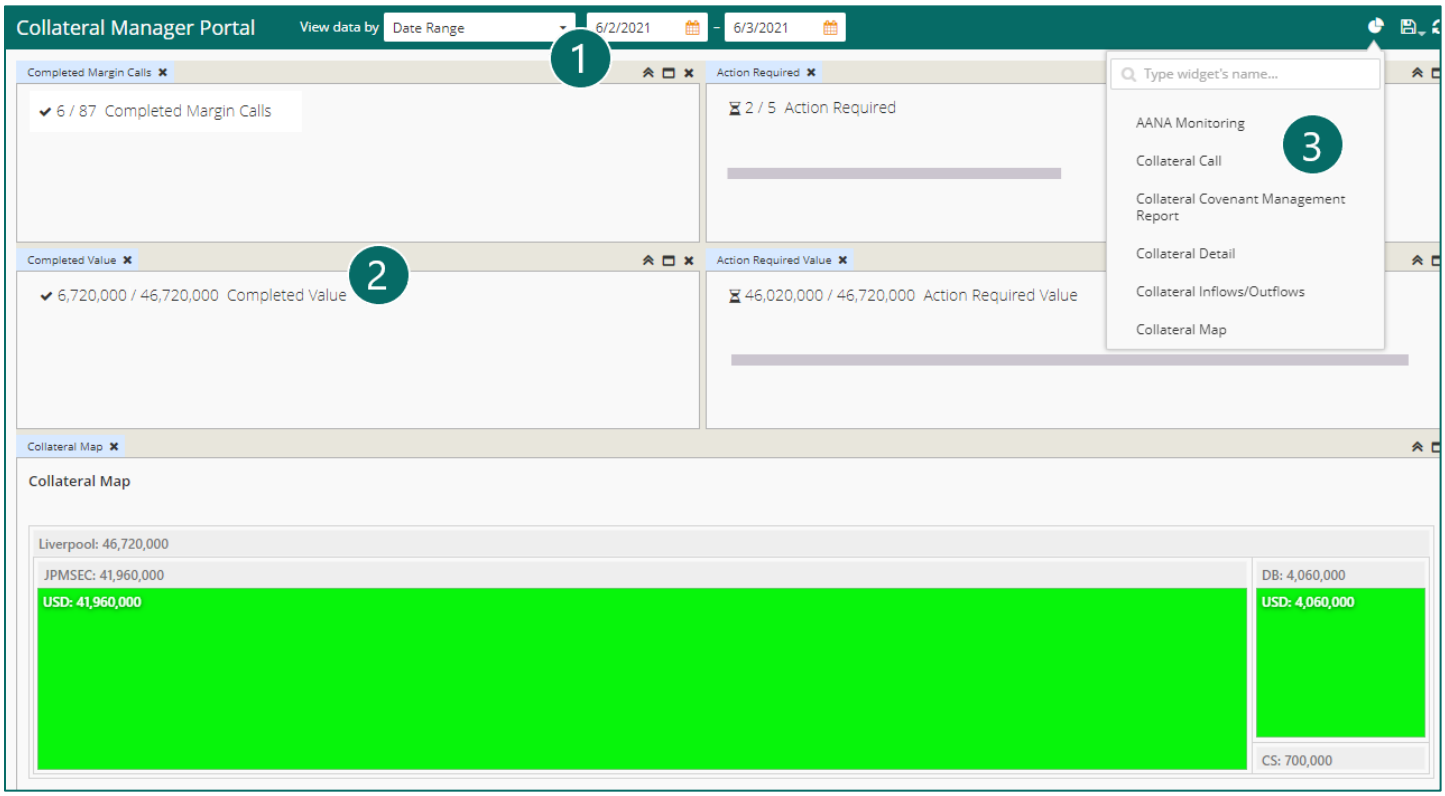


JPM	Liverpool LS Equity Fund	House IA	TESTAGREEMENT6	CSA	Liverpool JPM OTC	Anticipated D...
CS	ManchesterUnited Master Fund	VM	TESTAGREEMENT3	CSA	ManUnited CS OTC	No Data Recei...
CS	ManchesterUnited Master Fund	House IA	TESTAGREEMENT3	CSA	ManUnited CS OTC	No Data Recei...
CS	ManchesterUnited Master Fund	VM	1_Andrey_4_MRA	GMRA	ManUnited CS Repo	Anticipated D...

COLLATERAL MANAGER PORTAL

Collateral Manager Portal is a widget screen of the Collateral Manager module. The Portal page contains a pool of widgets available for the Collateral Manager module. Widgets can be selected and placed on the working area of the Portal screen. The position and the scale of widgets is custom and can be adjusted according to the users' personal convenience.

The Collateral Manager Portal is reviewed below:



1. **Portal Upper toolbar**: set of filters applied to all widgets deployed on the working area if the widgets are not configured to have individual settings.
2. **Working area**: a blank working sheet used for the widgets deployment. The position and scale of the widgets can be customized.
3. **Pool of widgets**: a dropdown with a list of widgets available for the Collateral Manager Portal screen. Press on the widget's name to place it on the working area.

INFO! Every widget has an individual parameters set. Individual configuration of the widget prevails over the Portal Upper toolbar settings. The parameters of the widgets can be reviewed in the *Configuration Settings window* (access directly from the widget's interface by pressing the gear icon in the top right corner).

POOL OF WIDGETS

The pool of widget contains all widgets created for the Collateral Manager module. Every widget has individual purpose and parameters. See the table below:

Widget Name	Type	Description
AANA Monitoring	Line/Bar/Area chart	Shows the graph that indicates whether the client is a subject of the UMR regulation based on the client's Average Aggregate Notional Amount (AANA) of uncleared OTC derivatives.
Collateral Call	Line chart	

Collateral Detail	Pivot Grid	
Collateral Covenant Management Report	Grid	Shows the reports generated with the Covenant Solution of the Optimizer tool which assist users in managing certain collateral contracts with specific and esoteric requirements (covenants).
Collateral Inflow/Outflows	Line/Bar/Area chart	
Collateral Map	Heat Map	

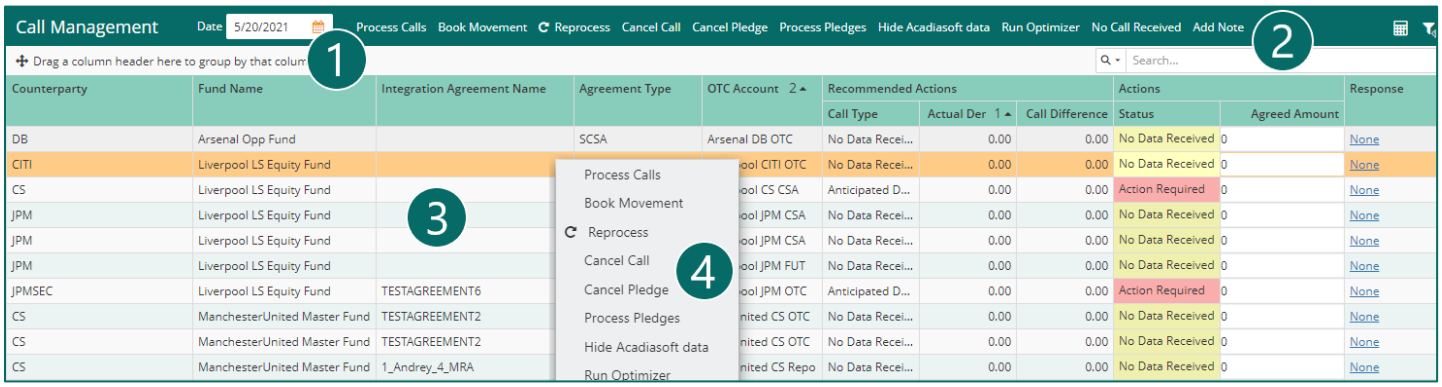
INFO! Remember that every widget can be reconfigured to display collateral data in different dimensions or ratios; therefore, users are able to place multiple copies of one widget on the working area and then configure them differently. It is healthy to rename the copies of widgets in this occasion.

CALL MANAGEMENT

Call Management is a primary Collateral Manager screen: it is designed as a control console and management platform for margin calls. The Call Management screen contains a management grid and operational toolkit required for effective and swift margin call management. The management grid contains collateral data, compares Fund Data and Counterparty data, displays recommended actions, highlights required actions, and many more.

NOTE! The Call Management screen will work with processed data only when the corresponding *Collateral Agreements* are established in the *Reference Data module*. With no active Agreements, the Call Management grid remains blank regardless if the data is processed into the system.

The Call Management screen is reviewed below:



1. **Date selector**: select the date to display collateral data for that day.
2. **Upper toolbar**: set of buttons to operate with grid entries. **NOTE!** Buttons are available for today's business day only.
3. **Call Management grid**: displays collateral data. Entries are grouped by Account.
4. **Context menu**: right-click on the entry to see the set of option applicable to it.

The Call Management grid and the Upper toolbar buttons represents two powerful tools designed specifically for margin call management. They are explicitly reviewed below.

CALL MANAGEMENT GRID

Call Management grid displays Collateral Accounts associated with collateral Agreements. The collateral data is received from the following sources: accounting system files, counterparty files, integrated platforms. It is also automatically calculated from the collateral balances (*Collateral Balances screen*). The general purpose of the values aggregation is to manage margin calls.

Some columns' values are calculated on a base of rules embedded in the source code. These columns' calculation logic is presented below.

FUND DATA & COUNTERPARTY DATA SECTIONS

Fund Data section and **Counterparty Data section** both contain equal set collateral values received from different sources respectively:

- **Fund Data:** values generally received from fund accounting systems.
- **Counterparty Data:** values generally received from third-party sources (bank, broker, etc.)

The columns for both sections are reviewed below (see next page):

Fund Data							Counterparty Data					
MTM	Total IA/IM	Collateral Value	Net Exposure	Credit Support Amount	Other Adjustment	Call Amount	MTM	Total IA/IM	Collateral Value	Net Exposure	Credit Support Amount	Call Amount
18,805,465.50	(23,800,000.00)	10,000,000.00	5,005,465.50	(4,994,534.50)	0	5,005,465.00	18,858,701.00	(23,800,000.00)	10,000,000.00	5,058,701.00	(4,941,299.00)	5,058,701.00
3,806,259.00	(22,800,000.00)	10,000,000.00	(8,993,741.00)	(18,993,741.00)	0	(8,990,000.00)	0.00	0.00	0.00	0.00	0.00	0.00
2,011,363.00	(25,461,817.63)	10,000,000.00	(13,450,454.63)	(23,450,454.63)	0	(13,450,000.00)	2,064,598.00	(22,800,000.00)	10,000,000.00	(10,735,402.00)	(20,735,402.00)	(10,740,000.00)
0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	(510,102.04)	(510,102.04)	0.00	0	(510,102.04)	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,805,465.50	(23,800,000.00)	9,900,000.00	(10,094,534.50)	(19,994,534.50)	0	(10,090,000.00)	3,858,701.00	(23,800,000.00)	10,000,000.00	(9,941,299.00)	(19,941,299.00)	(9,940,000.00)
0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	(23,800,000.00)	0.00	(23,800,000.00)	(23,800,000.00)	0	(23,800,000.00)	0.00	(23,800,000.00)	0.00	(23,800,000.00)	(23,800,000.00)	(23,800,000.00)

Column name	Fund Data section	Counterparty section
MTM	Market-To-Market value of all derivative instruments that belong to the Account. The value can be loaded from a Feed file delivered by Accounting system or calculated from Open Trades positions. **NOTE!** The value is a hyperlink: click it to jump to the *Open Trades* screen.	Market-To-Market value of all derivative instruments that belong to the Account. The value is loaded from a Feed file delivered from the Counterparty's side: broker, bank, etc. **NOTE!** The value is a hyperlink: click it to jump to the *Position Analysis* screen (*Reference Data module*).
Total IA/IM	Independent Amount/Initial Margin value. The value can be loaded from a Feed file delivered by Accounting system or calculated on a basis of Initial Margin section of the corresponding Agreement.	Independent Amount/Initial Margin value. The value can be loaded from a Feed file delivered by Counterparty or calculated on a basis of Initial Margin section of the corresponding Agreement.
Collateral Value	Collateral balance of the Account. The value can be loaded from a Feed file delivered by Accounting system or calculated from the Collateral Balances positions. **NOTE!** The value is a hyperlink: click it to jump to the *Collateral Balances* screen.	Collateral balance of the Account. The value is loaded from a Feed file delivered by Counterparty: broker, bank, etc.
Net Exposure	Calculated excess or deficit value that represents a difference between traded derivative instruments and maintenance assets. Calculation method depends on the Company Preference *Add Collateral Value in Margin Call Calculation* value.	Calculated excess or deficit value that represents a difference between traded derivative instruments and maintenance assets. Calculation method depends on Company Preference *Add Collateral Value in Margin Call Calculation* value.
Credit Support Amount	The amount of collateral required to be posted by the Fund side. It takes into consideration the *MTM* and the *IA/IM* and the *Agreement threshold*.	The amount of collateral required to be posted by the Counterparty side. It takes into consideration the *MTM* and the *IA/IM* and the *Agreement threshold*.
Other Adjustment	An additional field reserved specifically for all other possible changes that can occur inside the Account.	No column is this section: Counterparty data does not imply adjusting inside the foreign system.
Call Amount	Calculated value that represents a margin call amount from the Fund side. Calculation method depends on variables established in corresponding Agreement: *Threshold, Rounding* and *Minimum Transfer Amount*.	Calculated value that represents a margin call amount from the Counterparty side. Calculation method depends on variables established in corresponding Agreement: *Threshold, Rounding* and *Minimum Transfer Amount*.

NOTE! Some values (***MTM, Fund Data Collateral Value***) represent hyperlinks leading to Hazeltree screens. Nevertheless, that does not necessarily mean that the underlined value has been calculated from domestic values. It also could have

been extracted from incoming Feed file data on Accounts' level. Users can tell the difference if the hyperlink leads them to a screen with no values on the grid.

Additionally, some of the Fund Data and Counterparty Data values calculation methods are customizable and can be changed depending on the client business peculiarities.

CREDIT SUPPORT AMOUNT COLUMN

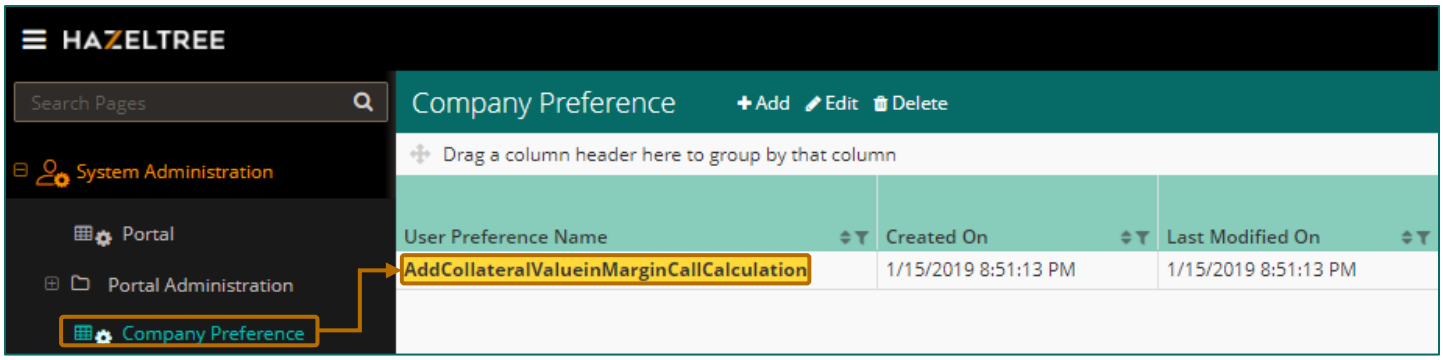
Credit Support Amount value is calculated on a basis of MTM, Total IA/IM and Threshold values giving the value that needs to be covered with Collateral posted:

- If (MTM + IA) is greater than 0: $(MTM + IA) - Threshold, minimum\ of\ 0$
- If (MTM + IA) is less than 0: $(MTM + IA) + Threshold, maximum\ of\ 0$

The result of the calculated Credit Support Amount is used as a basis for the Net Exposure and Call Amount columns.

NET EXPOSURE COLUMN

Net Exposure value is calculated on a base of Company Preference variable **Add Collateral Value in Margin Call Calculation**. To set the variable, proceed to the *System Administration module > Company Preference screen:*



Variable is of Boolean type and can take ***True*** or ***False*** values. Depending on the given value, calculation adds or subtracts Collateral Value from the sum of Market-To-Market and Initial Amount values:

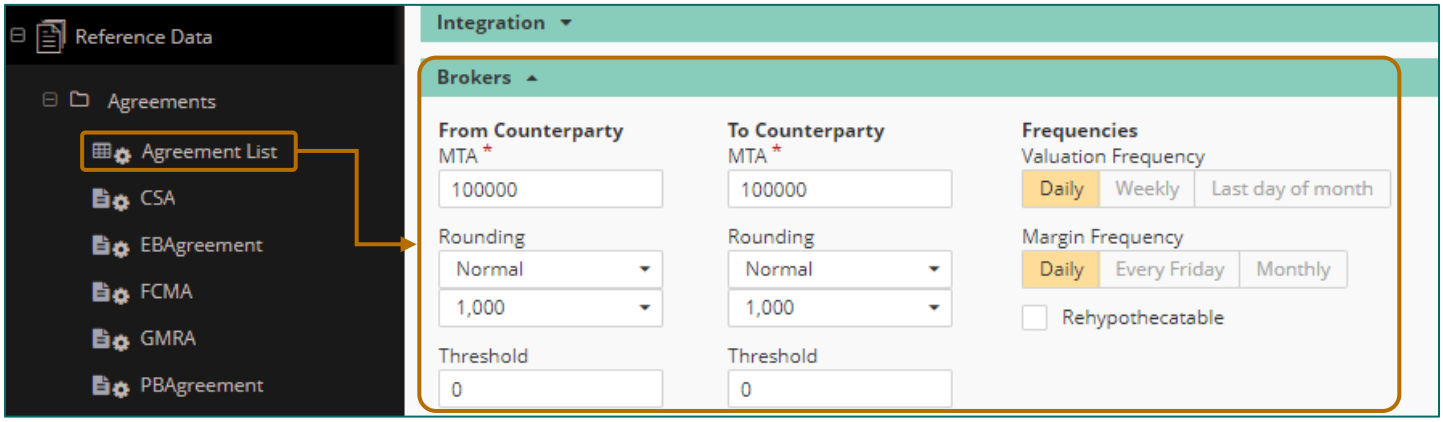
- **True**: $Credit\ Support\ Amount + CV$
- **False**: $Credit\ Support\ Amount - CV$

CALL AMOUNT COLUMN

Call Amount value calculation is based on Net Exposure value and Agreements settings. Agreement settings are located under the Broker section and define Call Amount calculation method:

- **Rounding**
- **Minimum Transfer Amount (MTA)**
- **Threshold**

To correct/specify these settings in Agreements, proceed to the *Reference Data module > Agreement List > Edit Agreement > scroll to section Brokers*. Specify all three values for both **From Broker** and **To Broker** sides:



Net Exposure that defines Call Amount calculation method can take positive or negative values:

- **Positive**: $(Exposure - From\ Broker\ Threshold), From\ Broker\ Rounding\ applied, From\ Broker\ MTA\ applied$
- **Negative**: $(Exposure - To\ Broker\ Threshold), To\ Broker\ Rounding\ applied, To\ Broker\ MTA\ applied$

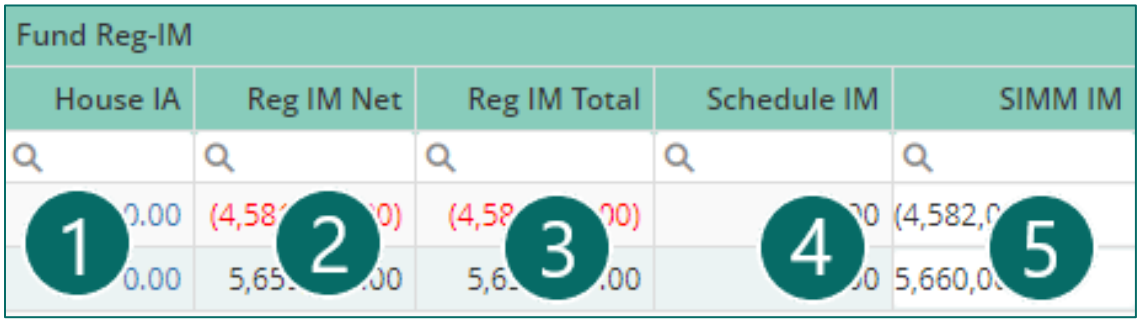
In both cases, corresponding Minimum Transfer Amount is applied to result calculated after Rounding. There are two possible outcomes:

- **Result > MTA**: Call Amount is equal to calculated result.
- **Result < MTA**: Call Amount = 0.

NOTE! If rounded or absolute Net Exposure value is greater than MTA or equal to MTA, the user gets corresponding ***Call*** or ***Demand***.

FUND & COUNTERPARTY REG-IM SECTION

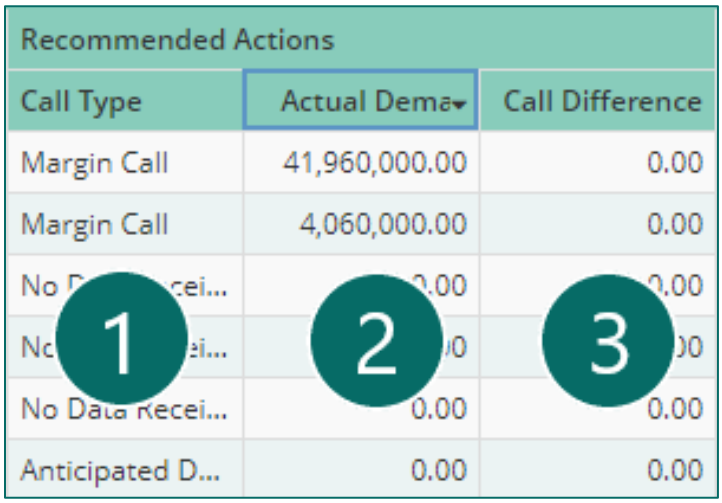
Fund Reg-IM and **Counterparty Reg-IM sections** display values for Collateral positions of *UMR Agreements* (*Regulatory CSA Agreements*) for both Fund and Counterparty sides. Both sections have an identical set of columns.



1. **House IA**: House Independent Amount. The value hyperlink is clickable and transports to the Open Trades screen.
2. **Reg IM Net**: net-weighted Regulatory Independent Amount.
3. **Reg IM Total**: total Regulatory Independent Amount.
4. **Schedule IM**: Independent Margin value calculated on a basis of the Collateral Account's open trades. This column works if the Regulatory Agreement's Default methodology is set to *Schedule*.
5. **SIMM IM**: Independent Margin value retrieved from processed Standard Initial Margin Model files. This column works if the Regulatory Agreement's Default methodology is set to *SIMM*. **NOTE!** The value can be edited directly on the grid.

RECOMMENDED ACTIONS SECTION

Recommended Actions section contains columns that display margin call data and actions recommended to perform. They base on the Fund Data and Counterparty Data analysis:



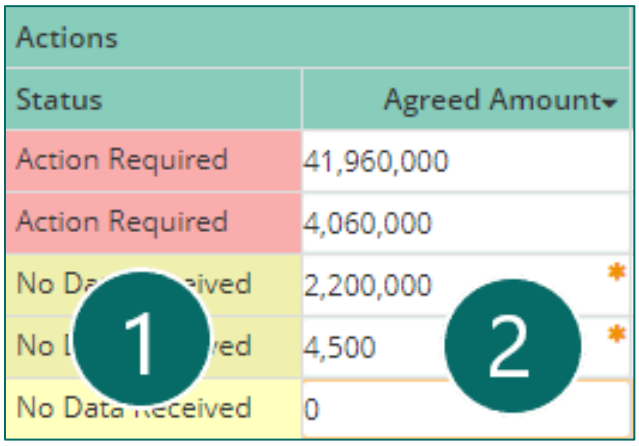
1. **Call Type**: a margin call action that is recommended to execute or a current status of the Collateral Account data.
2. **Actual Demand**: a value taken from the *Call Amount* column. The Call Amount value is taken from side of designated Valuation agent (Valuation agent is determined in corresponding Agreement: *House* or *Counterparty*).
3. **Call Difference**: a calculated difference between *Agreed Amount* and *Call Amount*. The Call Amount value, as in Actual Demand, is taken from side of designated Valuation agent.

INFO! The Call Type column displays a margin call action that is recommended to execute or a current status of the Collateral Account data; Call Type depends on the values of the margin call parameters. The table below shows all four possible actions and conditions:

Call Type	Conditions
No Data Received	When MTM, IA, Collateral Balance are all = 0 for Valuation agent
Anticipated Demand	1. When valuation agent's Call Amount is negative and exceeds the MTA of the Agreement 2. When valuation agent has a negative amount. 3. When there are no open trades (MTM or IA) and there is collateral Held (no MTA applied)
Margin Call	1. When valuation agent's Call Amount is positive and exceeds the MTA of the Agreement 2. When valuation agent has a positive amount. 3. When there are no open trades (MTM or IA) and there is collateral Posted (no MTA applied)
None - Below MTA	The valuation agent's Call Amount does not exceed the MTA (positive or negative)

ACTIONS SECTION

Actions section contains columns that display the actual margin call state at the current moment. They show margin call statuses and values:



1. **Status**: an actual status of margin call that informs user of the condition of the Collateral Account (required actions and last performed actions).
2. **Agreed Amount**: value of issued or received margin call. It can come from three possible sources and can be edited directly on the grid. If edited, the field shows the * sign.

AGREED AMOUNT

Agreed Amount column displays a margin call money value. This number can be received from three possible sources which have different priorities (listed below from highest to lowest priority):

1. **Manual population**: the value is entered on the Call Management grid by hand.
2. **Acadiasoft**: the value is captured from an integrated *Acadiasoft* platform.
3. **Call Amount**: the value is taken from a Call Amount column of the Valuation Agent side (*Fund Data* or *Counterparty Data*)

STATUS

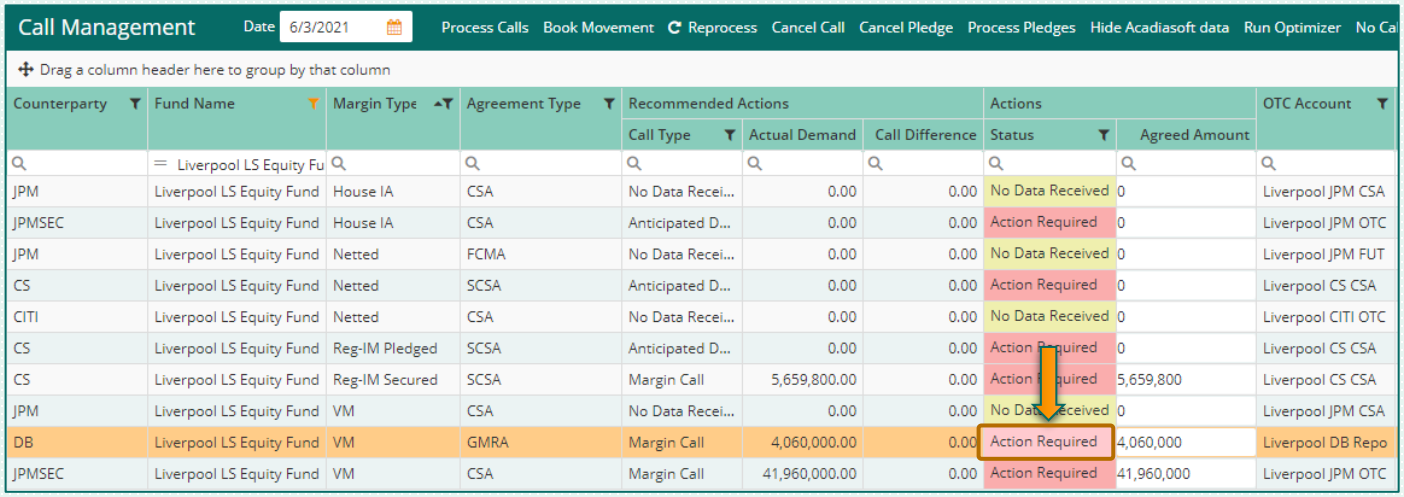
Status column shows the actual status of margin call. Margin call entries on the Call Management grid can take different statuses that evaluate the current condition of a Collateral Account margin data. Statuses are assigned in correspondence with the Account data condition, required actions and last performed actions.

INFO! The number of possible statuses is quite big. Refer to the Annex 2 to review the whole lot.

See the example below (next page).

EXAMPLE

User Caleb checks the Fund *Liverpool LS Equity Fund* on the Call Management screen for the Counterparty *DB* with intention to issue a Margin call. The status of the Collateral position in the column Status is **Action Required**.

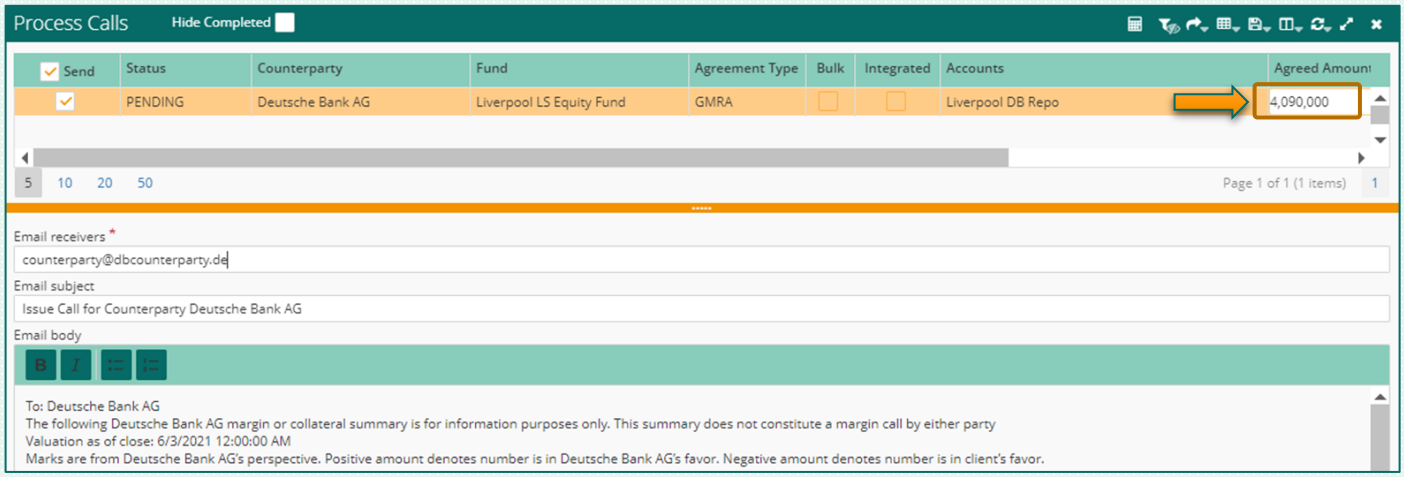


Call Management — Date 6/3/2021 — Process Calls | Book Movement | Reprocess | Cancel Call | Cancel Pledge | Process Pledges | Hide Acadiasoft data | Run Optimizer | No Ca

Drag a column header here to group by that column

Counterparty	Fund Name	Margin Type	Agreement Type	Recommended Actions			Actions		OTC Account
				Call Type	Actual Demand	Call Difference	Status	Agreed Amount	
	= Liverpool LS Equity Fu								
JPM	Liverpool LS Equity Fund	House IA	CSA	No Data Recei...	0.00	0.00	No Data Received	0	Liverpool JPM CSA
JPMSEC	Liverpool LS Equity Fund	House IA	CSA	Anticipated D...	0.00	0.00	Action Required	0	Liverpool JPM OTC
JPM	Liverpool LS Equity Fund	Netted	FCMA	No Data Recei...	0.00	0.00	No Data Received	0	Liverpool JPM FUT
CS	Liverpool LS Equity Fund	Netted	SCSA	Anticipated D...	0.00	0.00	Action Required	0	Liverpool CS CSA
CITI	Liverpool LS Equity Fund	Netted	CSA	No Data Recei...	0.00	0.00	No Data Received	0	Liverpool CITI OTC
CS	Liverpool LS Equity Fund	Reg-IM Pledged	SCSA	Anticipated D...	0.00	0.00	Action Required	0	Liverpool CS CSA
CS	Liverpool LS Equity Fund	Reg-IM Secured	SCSA	Margin Call	5,659,800.00	0.00	Action Required	5,659,800	Liverpool CS CSA
JPM	Liverpool LS Equity Fund	VM	CSA	No Data Recei...	0.00	0.00	No Data Received	0	Liverpool JPM CSA
DB	Liverpool LS Equity Fund	VM	GMRA	Margin Call	4,060,000.00	0.00	Action Required	4,060,000	Liverpool DB Repo
JPMSEC	Liverpool LS Equity Fund	VM	CSA	Margin Call	41,960,000.00	0.00	Action Required	41,960,000	Liverpool JPM OTC

However, Caleb does not quite agree with the Margin call size shown in the *Agreed Amount* column. He thinks it is $30.000 short, so he changes the value manually on the Process Call screen when issuing the Margin call.



Process Calls — Hide Completed

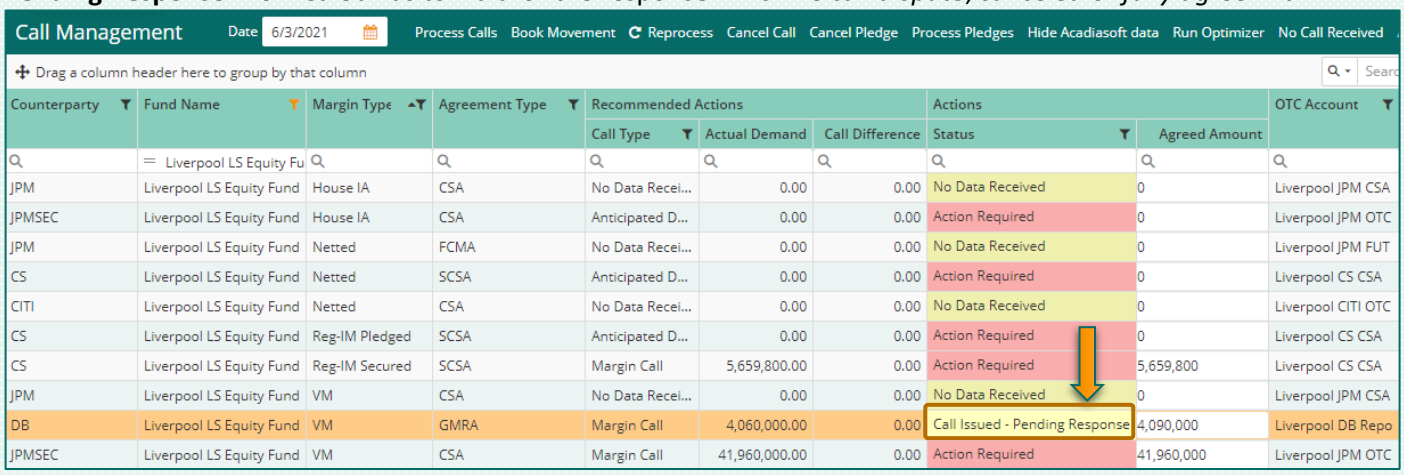
Send	Status	Counterparty	Fund	Agreement Type	Bulk	Integrated	Accounts	Agreed Amount
✓	PENDING	Deutsche Bank AG	Liverpool LS Equity Fund	GMRA			Liverpool DB Repo	4,090,000

5 10 20 50 — Page 1 of 1 (1 items) 1

Email receivers *
counterparty@dbcounterparty.de
Email subject
Issue Call for Counterparty Deutsche Bank AG
Email body

To: Deutsche Bank AG
The following Deutsche Bank AG margin or collateral summary is for information purposes only. This summary does not constitute a margin call by either party
Valuation as of close: 6/3/2021 12:00:00 AM
Marks are from Deutsche Bank AG's perspective. Positive amount denotes number is in Deutsche Bank AG's favor. Negative amount denotes number is in client's favor.

Margin call letter is composed automatically. Caleb sends the Margin call letter out and returns to the Call Management screen; it automatically refreshes and shows a new status of the Collateral position: **Call Issued – Pending Response**. Now Caleb has to wait for the response which he can *dispute*, *canceled* or *fully agree* with.



Call Management — Date 6/3/2021 — Process Calls | Book Movement | Reprocess | Cancel Call | Cancel Pledge | Process Pledges | Hide Acadiasoft data | Run Optimizer | No Call Received

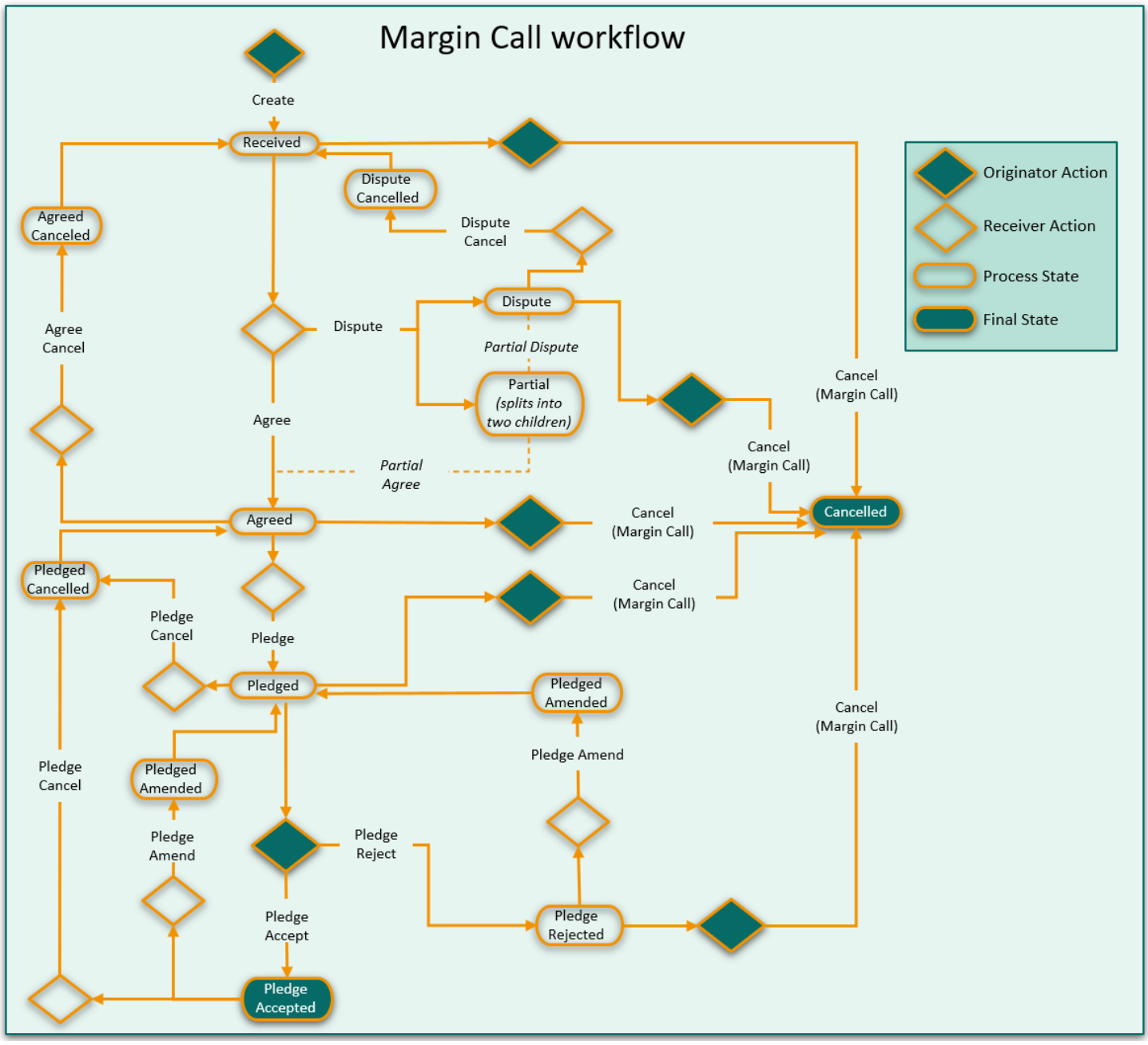
Drag a column header here to group by that column

Counterparty	Fund Name	Margin Type	Agreement Type	Recommended Actions			Actions		OTC Account
				Call Type	Actual Demand	Call Difference	Status	Agreed Amount	
	= Liverpool LS Equity Fu								
JPM	Liverpool LS Equity Fund	House IA	CSA	No Data Recei...	0.00	0.00	No Data Received	0	Liverpool JPM CSA
JPMSEC	Liverpool LS Equity Fund	House IA	CSA	Anticipated D...	0.00	0.00	Action Required	0	Liverpool JPM OTC
JPM	Liverpool LS Equity Fund	Netted	FCMA	No Data Recei...	0.00	0.00	No Data Received	0	Liverpool JPM FUT
CS	Liverpool LS Equity Fund	Netted	SCSA	Anticipated D...	0.00	0.00	Action Required	0	Liverpool CS CSA
CITI	Liverpool LS Equity Fund	Netted	CSA	No Data Recei...	0.00	0.00	No Data Received	0	Liverpool CITI OTC
CS	Liverpool LS Equity Fund	Reg-IM Pledged	SCSA	Anticipated D...	0.00	0.00	Action Required	0	Liverpool CS CSA
CS	Liverpool LS Equity Fund	Reg-IM Secured	SCSA	Margin Call	5,659,800.00	0.00	Action Required	5,659,800	Liverpool CS CSA
JPM	Liverpool LS Equity Fund	VM	CSA	No Data Recei...	0.00	0.00	No Data Received	0	Liverpool JPM CSA
DB	Liverpool LS Equity Fund	VM	GMRA	Margin Call	4,060,000.00	0.00	Call Issued - Pending Response	4,090,000	Liverpool DB Repo
JPMSEC	Liverpool LS Equity Fund	VM	CSA	Margin Call	41,960,000.00	0.00	Action Required	41,960,000	Liverpool JPM OTC

MARGIN CALL

Margin call is a compound procedure of demanding additional money or Securities to ensure that margin account is brought up to the minimum maintenance margin level. The process of Margin Call routine is presented on the below schema.

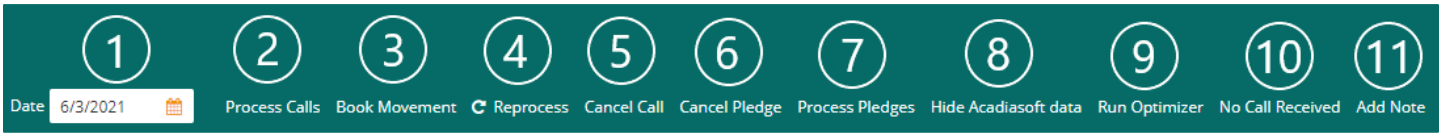
IMPORTANT! Pledge routine is available only with integrated **Acadiasoft**.



CALL MANAGEMENT UPPER TOOLBAR

Call Management Upper toolbar contains Date selector and operation buttons that allow to interplay with the Margin call entries of the Call management grid.

Call Management Upper toolbar is reviewed below:



1. **Date selector**: select the date to display Margin call entries for that day.
2. **Process Calls**: select one or several Collateral Accounts on the grid and press the button to call the *Process Call* pop-up screen where Margin calls can be issued or Margin calls demands can be answered.
3. **Book Movement**: select one of several Collateral Accounts on the grid and press the button to call the *Book Movement* pop-up screen where user can move money among Accounts as Transactions. In case of Acadiasoft integration, it also allows to create pledges.
4. **Reprocess**: press to renew and recalculate all collateral data on the grid. This option is also used to update the data coming from integrated third-party systems.
5. **Cancel Call**: select issued Margin call on the grid and press the button to cancel margin call. This option can call *Cancel Issue Call* pop-up screen in order to specify the cancelation reason before canceling Margin call.
6. **Cancel Pledge**: select one or several Collateral Accounts on the grid in statuses *Pledge_Variation* / *Netted* / *Initial_Incoming* and press the button to reject selected Pledges.
7. **Process Pledge**: select one or several Collateral Accounts on the grid in statuses *Pledge_Variation* / *Netted* / *Initial_Outgoing* and press to call *Process Pledges* pop-up screen where the Pledges can be processed.
8. **Show/Hide Acadiasoft data**: press to display or conceal collateral data received from integrated third-party platform *Acadiasoft*. When Acadiasoft data is concealed, the grid displays merely processed files data.
9. **Run Optimizer**: press to launch the Optimizer Solution specified in Company Preference settings. The Solution produces Suggested Actions based on current collateral values.
10. **No Call Received**: select one or several Collateral Accounts on the grid and press the button to change their Statuses to *No Call Received*.
11. **Add Note**: select one Collateral Account on the grid and press the button to call the *Notes Manager* pop-up screen where one or multiple notes can be added.

ACADIASOFT INSTRUMENTS

Some Upper toolbar instruments are available exclusively with integrated Acadiasoft third-party platform. These instruments are:

- **Cancel Pledge**
- **Process Pledges**
- **Show/Hide Acadiasoft data**

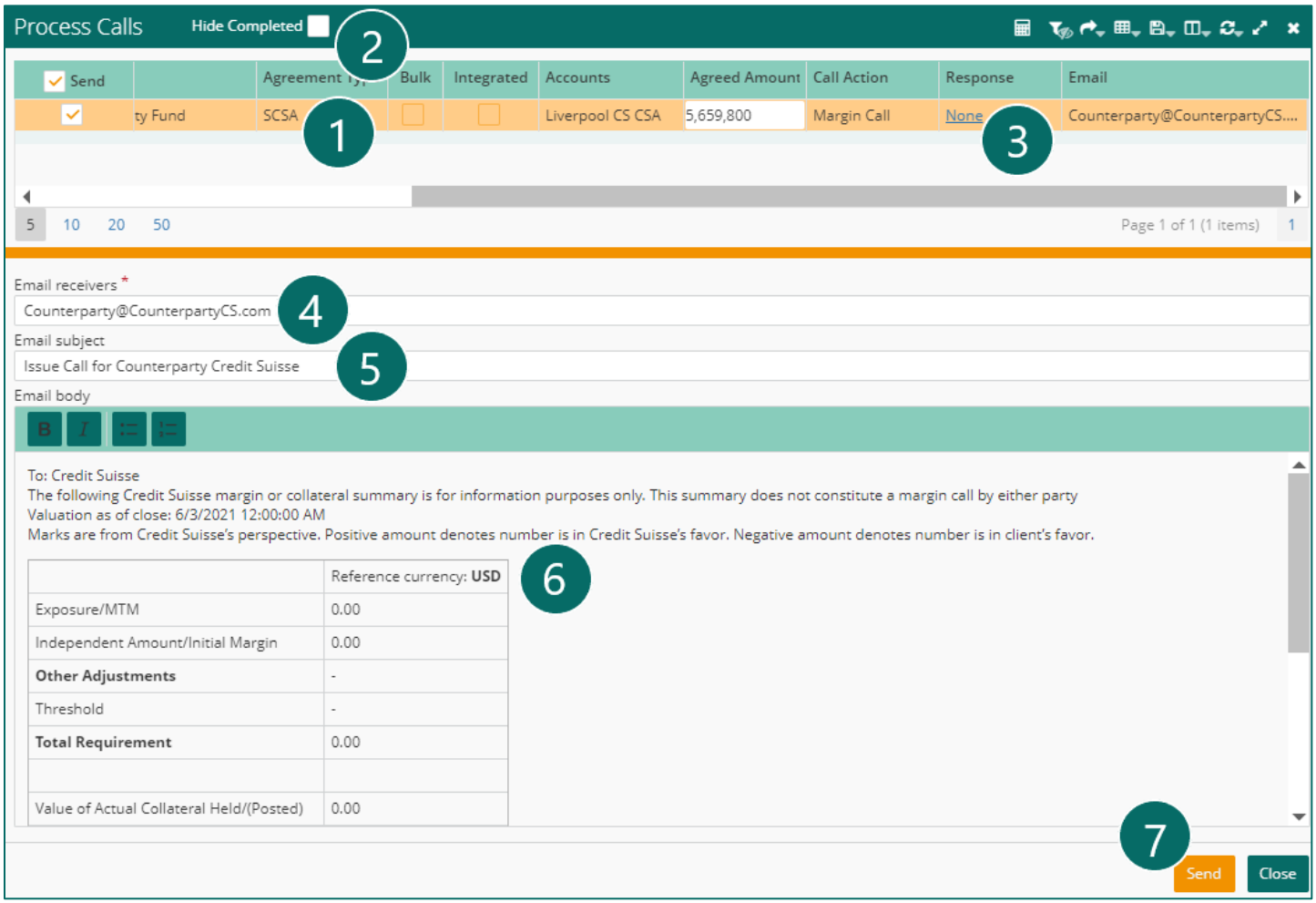
NOTE! The Call Management Upper toolbar buttons are available for previous business day only.

All Call Management Upper toolbar instruments are explicitly reviewed in the sections below.

PROCESS CALLS

Process Calls Upper toolbar button allows users to issue Margin call or respond to the received Margin call demand. The button opens Process Calls pop-up screen where users operate. It is possible to bulk process numerous margin call entries regardless of their Acadiasoft integration status (select them on the grid and press Process Calls).

Process Calls pop-up screen is reviewed below:



1. **Margin calls**: Margin call entries selected for *Margin call issue*/*Respond to Demand*.
2. **Hide Completed**: mark the checkbox to conceal Margin calls you have already finished working with.
3. **Response**: a clickable column that allows to pick the Response for *Respond to Demand* action.
4. **Email receivers***: list of addressees to get the *Margin call letter*/*Response to Demand*.
5. **Email subject**: automatically composed email subject.
6. **Margin call letter**: populated with a predefined Margin call letter template. The text is available for editing
7. **Send/Close**: press to send the issue/close the pop-up screen.

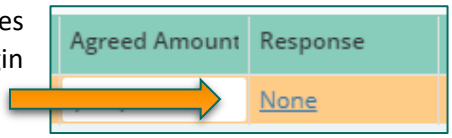
MARGIN CALL ISSUE

Margin call issue goes differently for Accounts integrated with Acadiasoft third-party platform. Users are not required to send out Margin call letters: instead, Margin call is delivered directly to Acadiasoft platform and can be further managed from there.

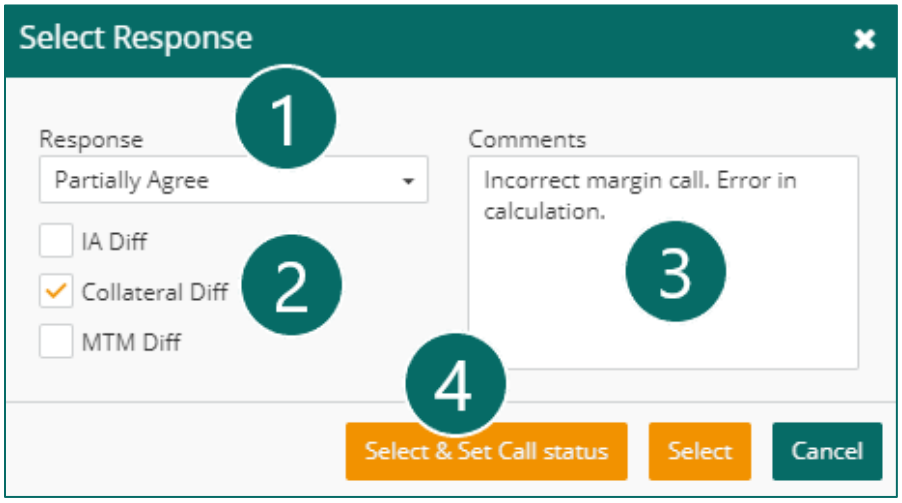
INFO! Margin call status in the Actions section changes automatically per delivery. No other actions are needed from the Hazeltree side.

RESPOND TO DEMAND

Respond to Demand is an action where a Margin call issued from outside requires reaction from receivers. In order to respond to incoming demand, select the Margin call on the Call Management grid and pick a response in the column **Response**.



INFO! The response can be picked not only on the grid but on the Process Calls pop-up screen in the corresponding column. When clicked, the Response link opens the **Select Response** pop-up screen:



1. **Response**: select the response from the dropdown out of three possible options (*Agree In Full*, *Partially Agree*, *Dispute*).
2. **Difference**: specify where the discrepancies are (in case of *Dispute* or *Partially Agree*).
3. **Comments section**: supply response with a brief comment.
4. **Select & Set Call status**: press to set the status of the Margin call.

RESPOND TO DEMAND WITH ACADIASOFT

Margin call issued from the Acadiasoft side is marked with the status **Received_Initial_Incoming**. The process of response to initiated Margin call is identical to non-integrated Accounts. However, the email body part is disabled due to the specifics of Acadiasoft communication.

Response does not imply any email enclosure and is automatically delivered to Acadiasoft side when sent. No other action is needed from the Hazeltree side.

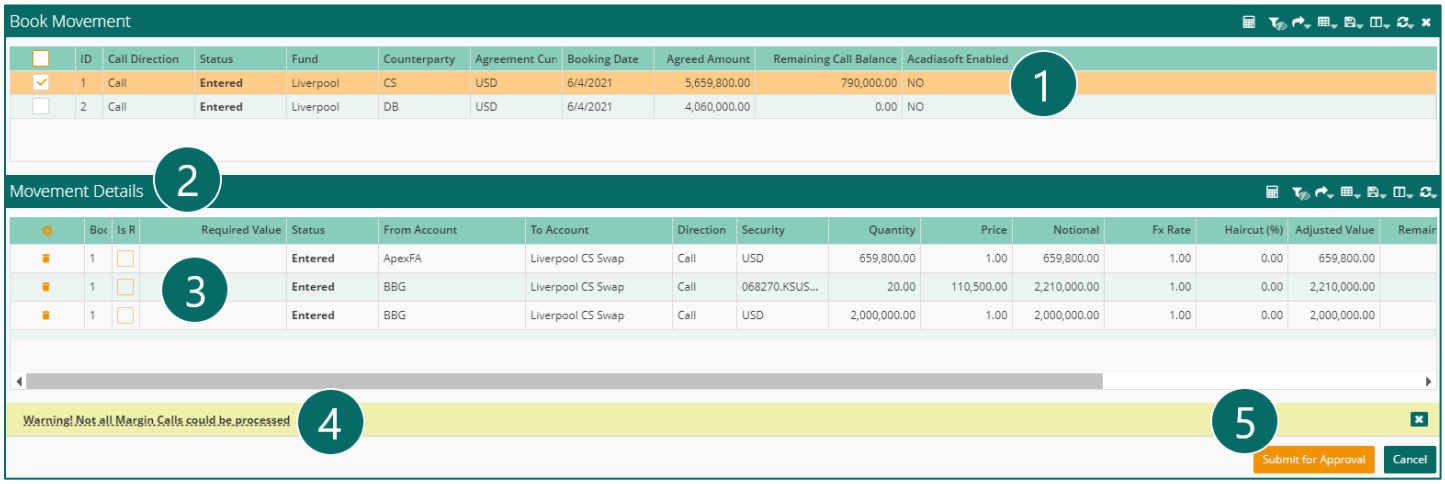
BOOK MOVEMENT

Book Movement Upper toolbar button allows to create Margin call pledges. The button opens Book Movement pop-up screen where users operate. It is possible to use the option for numerous margin call entries.

> *Term:* **Pledge** is a step in the Margin call process that implies specification of a detailed transactions plan that shows how the agreed money amount is going to be transferred to demanding side.

NOTE! Book Movement option is only available for margin calls that has not been disputed and have Response to Demand column values **Agree In Full** or **Partially Agree**.

The Book Movement pop-up screen is reviewed below (see next page):



1. **Margin call entries**: Margin calls with Agreed statuses selected for pledging.
2. **Movement Details section**: contains initial pledge with full agreed money amount for selected Margin call.
3. **Pledges**: shows how the agreed money amount is going to be transferred to demanding side.
4. **Warning sign**: displayed in case then the margin calls cannot be processed. Place the mouse pointer on the warning sign to know the details.
5. **Submit for Approval**: press to submit pledges for approval from demanding side.

NOTE! Movement Details section becomes unavailable when multiple Margin calls are selected on the Book Movement screen. Select one Margin call to unblock the Movement Details section: it is possible to operate with Margin call details strictly one-by-one.

SPLIT PLEDGES

Split Pledges allows to plan money movement at large. Initially the Movement Details for selected Margin call contains only one pledge transaction with the total value of agreed money amount in the column *Notional*:

It is possible to split one pledge into several pledges and also select a different OTC Account for sender side. To split one pledge into several, create new entries and correct the *Notional* value (additionally, Currency, From account, etc.)

The Movement Details section is reviewed below:

1. **Add entry**: press the plus sign to add an extra Pledge entry. If the Notional value was reduced, an extra Pledge entry will automatically take the value from *Remaining Call Balance* column.
2. **Status**: shows the Pledges statuses.
3. **From Account**: select From Account from the dropdown.
4. **Security**: select either Currency (e.g. USD, EUR) or a Security instrument (e.g. Stock, Bond, Swap). **NOTE!** It is possible to fulfill the Pledge with Security instruments. Edit *Quantity* (**5**) to reach the required money value.
5. **Quantity**: shows the sum of money for selected Currency or the number of Security instruments.
6. **Price**: shows the price of the Security instrument.
7. **Notional**: total sum of the Pledge.

INFO! The total number of pledges is not limited. When pledges are completed, submit them for approval.

BOOK MOVEMENT FOR NON-INTEGRATED ACCOUNTS

Non-integrated Accounts that are available for selection under the Movement Details section and can take *From* and *To* sides depending on the Margin call issuer side. In case of non-integrated Accounts the Counterparty's demands and responses are forged outside Hazeltree system (by phone, email or live). Therefore, the pledges can take positive and negative Notional values:

- **Positive Notional value**: the Margin call was issued from the Hazeltree side and responded by Counterparty outside the Hazeltree system. Book Movement implies selection of Accounts on *To* side.
- **Negative Notional value**: the Margin call was issued by the Counterparty outside the Hazeltree system and responded by the Hazeltree client. Book Movement implies selection of Accounts on *From* side.

BOOK MOVEMENT FOR INTEGRATED ACCOUNTS

Acadiasoft integrated Accounts are available for Book Movement only when the Margin call was issued from the Counterparty side (in this case, the Acadiasoft platform) and then progressed to one of the Action statuses:

- **Agreed_Variation_Incoming**
- **Partial_Agreed_Variation_Incoming**

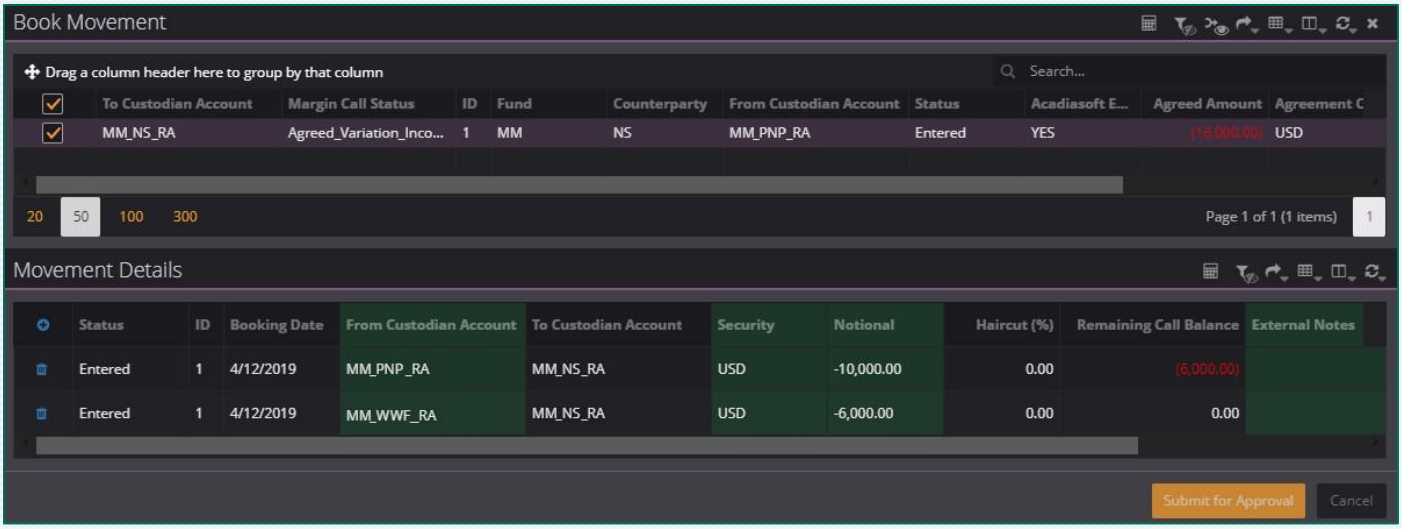
In case of an integrated Account, the Notional column can take only negative values. Therefore, the Book Movement implies selection of Accounts exclusively on the *From* side.

See the example below.

EXAMPLE

Margin call has been issued by Counterparty **NS** to Account **MM_PNP_RA** which Agreement is associated with third-party platform Acadiasoft. The value of margin call is $16.000. Margin call receiver calculated that the most optimal way to fulfill margin call was to transfer $10.000 from Account MM_PNP_RA and $6.000 from Account MM_WWF_RA. User splits initial pledge into two pledges, selecting MM_WWF_RA on From side for remaining $6.000.

As a result the final layout of book movement looks like this:

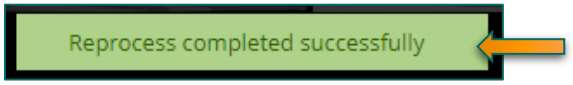


REPROCESS

Reprocess Upper toolbar button triggers recalculation of the entire Call Management grid. Reprocess procedure is automatized on the Call Management screen and catches the last changes made to Agreements, Collateral Accounts and collateral data automatically. Reprocess button is used in two cases:

- Total recalculation of Call Management values using new Collateral Agreements data.
- Update of the Integrated Account status when the Acadiasoft platform issued a message.

Successful Reprocess is supplied with green plate on top of the Call Management screen:



NOTE! Manually entered **Agreed Amount** value under Actions section of Call Management grid will be disregarded with Reprocess procedure.

CANCEL CALL

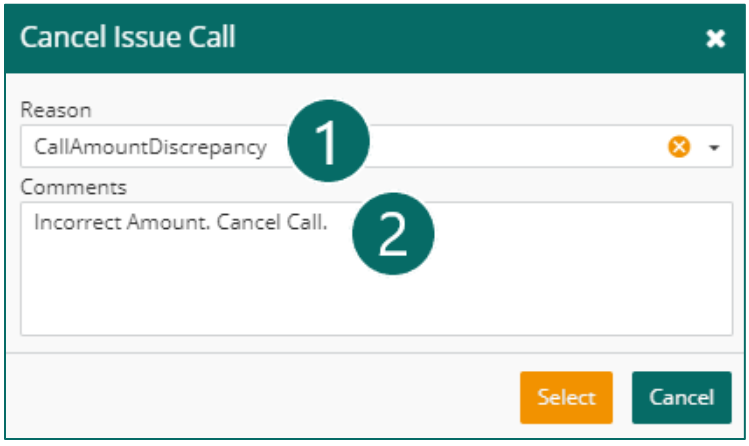
Cancel Call Upper toolbar button disregards Margin calls issued from the Hazeltree side. To cancel an issued Margin call, select one on the Call Management grid and press Cancel Call. The process of Margin call cancelation depends on the Collateral Agreement integration status:

- **Integrated with third-party Acadiasoft platform**: Cancel Call button calls *Cancel Issue Call* pop-up screen.
- **Non-integrated Account**: Cancel Call button cancels Margin call automatically.

CANCEL CALL WITH ACADIASOFT

To cancel issued margin call for an Agreement integrated with Acadiasoft platform, select the Margin call with the **Received_Variation_Outgoing** Status and press Cancel Call button.

Cancel Issue Call screen is reviewed below:



1. **Reason**: select the reason for cancelation from the dropdown menu.
2. **Comment section**: back up the reason with a brief comment.

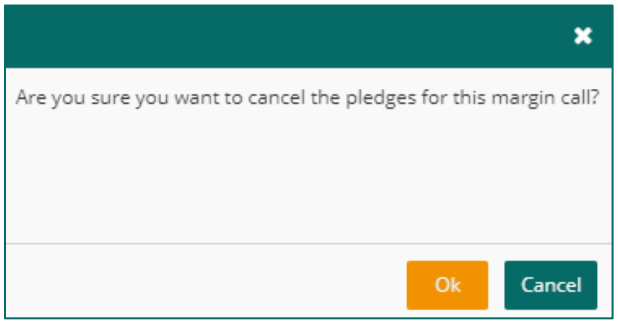
CANCEL CALL FOR NON-INTEGRATED ACCOUNTS

To cancel issued Margin call for a non-integrated Agreement, select the Margin call with a **Pending Response** Status on the grid and press Cancel Call button. The Status of the call will be kicked back to the previous one.

NOTE! It is impossible to bulk cancel margin calls. They must be cancelled one by one.

CANCEL PLEDGE

Cancel Pledge Upper toolbar button cancels pledges submitted for approval from the Fund side. To cancel the pledge select a Margin call with approved pledges on the Call Management grid and press the Cancel Pledge. Then confirm the cancelation:

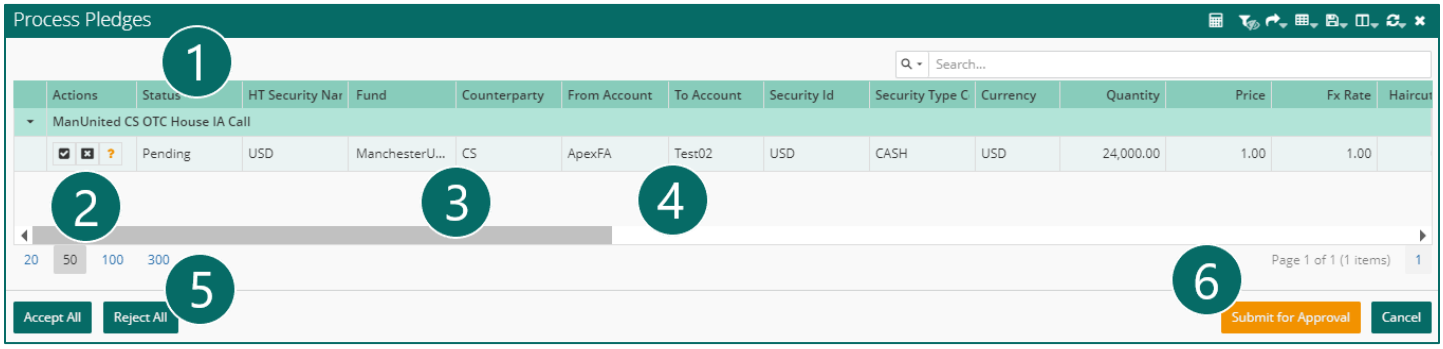


NOTE! The Status of the call will be kicked back to the previous one.

PROCESS PLEDGES

Process Pledges Upper toolbar button allow to accept or reject Pledges that came from the Acadiasoft side with statuses *Pledge_Initial* / *Variation* / *Netted_Outgoing Action*. It is possible to bulk process pledges for multiple Margin calls. Select the Margin calls on the grid of the Call Management screen and press the Process Pledges button to call the *Process Pledges* pop-up screen.

The Process Pledges screen is reviewed below:



1. **Selected Margin calls**: details of the Collateral Accounts with received pledge demands.
2. **Actions**: a column that displays *Accept*, *Reject* or *Ignore* actions for Margin calls.
3. **Fund/Counterparty**: columns display Fund and Counterparty codes.
4. **From/To Accounts**: columns display the From and To Accounts. **NOTE!** Press a pencil icon next to the Account name to select a different Account from the dropdown.
5. **Accept/Reject All**: press to select *Accept*/*Reject* action for all Accounts in the Process Pledges list.
6. **Submit for Approval**: press to submit all specified actions.

NOTE! It is not possible to process not all pledges for one Margin call.

Pledges statuses are also synchronized with the Acadiasoft platform side: accepted and rejected Pledges take according values in Acadiasoft user interface. Ignored pledges are not processed at all.

Accepted Pledges transform into Transactions. Proceed to the *Transaction Manager module* to start money movement.

INFO! Process Pledges is an option that is available strictly for Collateral Agreements integrated with the third-party platform Acadiasoft.

SHOW/HIDE ACADIASOFT DATA

Show/Hide Acadiasoft data Upper toolbar button helps switching between different Counterparties' data. The data can come from two sources:

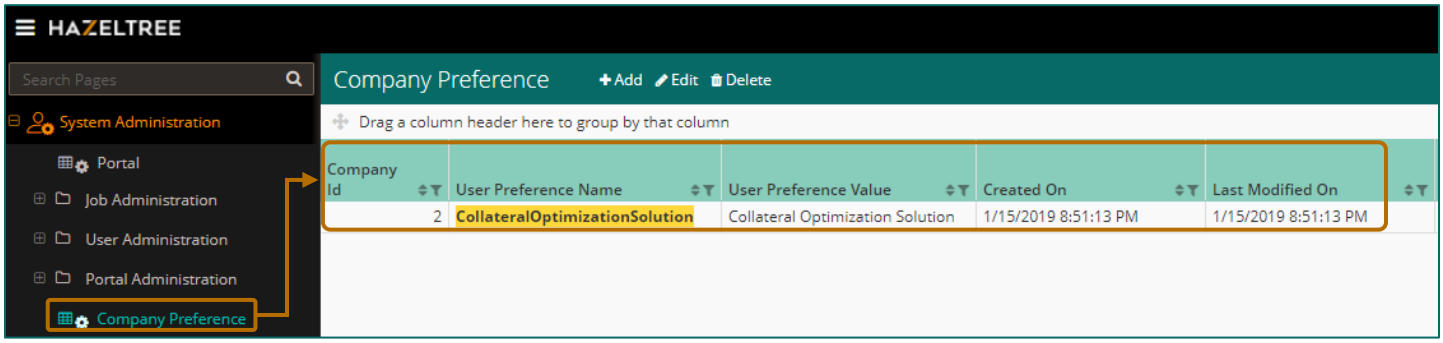
- **Upload from incoming files**: data extracted from incoming Counterparty Feed files and processed by Hazeltree.
- **Acadiasoft**: incoming data from an integrated Acadiasoft platform for Agreements associated with Acadiasoft.

INFO! Both sources can deliver collateral data simultaneously for identical Margin calls. To review Feed files data instead of Acadiasoft, press *Hide Acadiasoft data* and the Acadiasoft data will be substituted with Feed files data. To bring back the Acadiasoft data, press *Show Acadiasoft Data* and the Feed files data will be automatically substituted with Acadiasoft values.

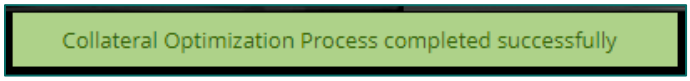
RUN OPTIMIZER

Run Optimizer Upper toolbar button launches the Optimizer Solution specified in the Company Preference variable **CollateralOptimizationSolution**. Press the button to submit and initiate the Collateral Optimization process.

> *Term:* **Optimizer Solution** is a collection of algorithms (*Algos*) that represent particular rules and conditions written with C# code. Solution runs Algos one by one producing *Suggested Actions* which, in turn, recommend Hazeltree users the best ways to optimize Portfolios to their benefit. The Solution built for Collateral Optimization process must be specified on the Company Preference screen.

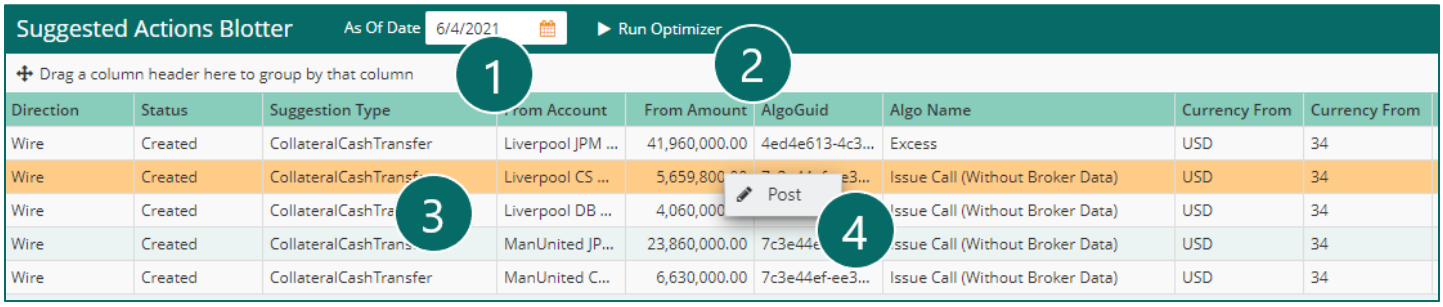


INFO! The run time of the Optimizer Solution depends on the number of Algos within the Solution and the amount of collateral data to process. When the process is complete, the green plate emerges on top of the Call Management screen:



Suggested Actions produced with the Optimizer Solution automatically populate the *Suggested Actions Blotter* grid of the *Optimizer module*. To review Suggested Actions for the Collateral Manager, proceed to the Optimizer Blotter screen after the Optimization process is completed.

Optimizer Blotter screen is reviewed below:



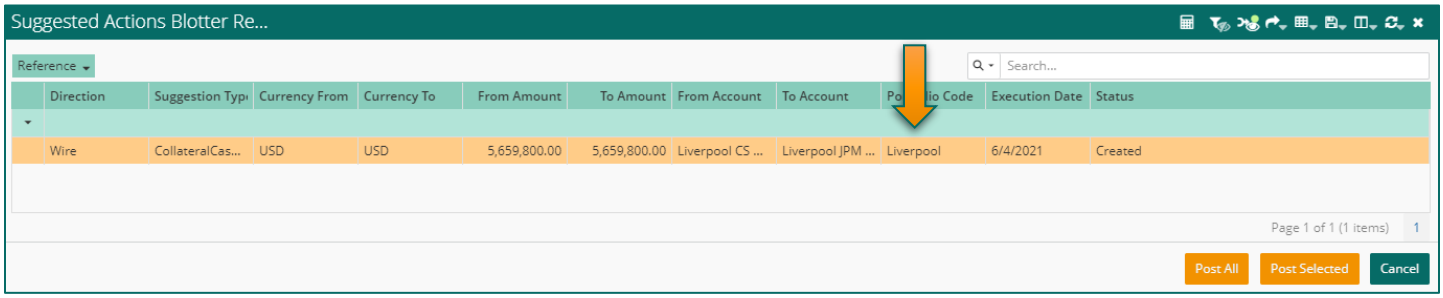
1. **As Of Date**: review produced Suggested Action for selected date.
2. **Run Optimizer**: press the button to launch Optimizer.

3. **Blotter grid**: contains all Suggested Actions produced by Optimizer for selected date.
4. **Post**: select a Suggested Action and press post to transform it to the Transaction Message (TM).

POST SUGGESTED ACTIONS

Suggested Actions produced with Optimizer Solution can be posted as Transaction Messages (TM). It is possible to bulk-post Suggested Actions. To post multiple Actions, select them on Blotter grid, press left mouse button and click Post. Suggested Actions Blotter Reference pop-up screen appears on top of the screen.

Posting a Suggested Action produces Transaction Messages (TM) or a corresponding type (*Cash, Wire, Security*) that populate the *Transactions* screen under the *Transaction Manager module*.

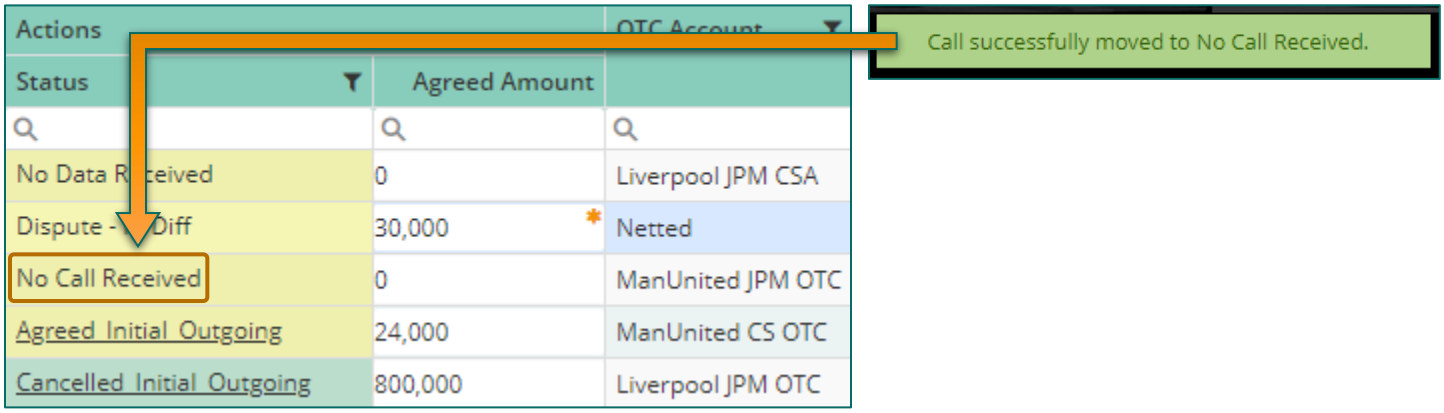


INFO! When posted, Suggested Actions remain on Optimizer Blotter grid. Follow the progress of posting by checking out the column Status on the grid. There are four possible statuses available for Suggested Actions:

- **Created**: Suggested Action is created by Optimizer Solution and can be posted.
- **Posting**: Suggested Action is in the process of posting.
- **Posted**: Suggested Action is posted. Created transaction can be reviewed in Transaction Manager module.
- **Failed**: Posting process failed.

NO CALL RECEIVED

No Call Received Upper toolbar button changes the Action status of the Margin call to *No Call Received*. Use this option to indicate that the Margin call supposedly issued from the Counterparty was not received on the Hazeltree end.



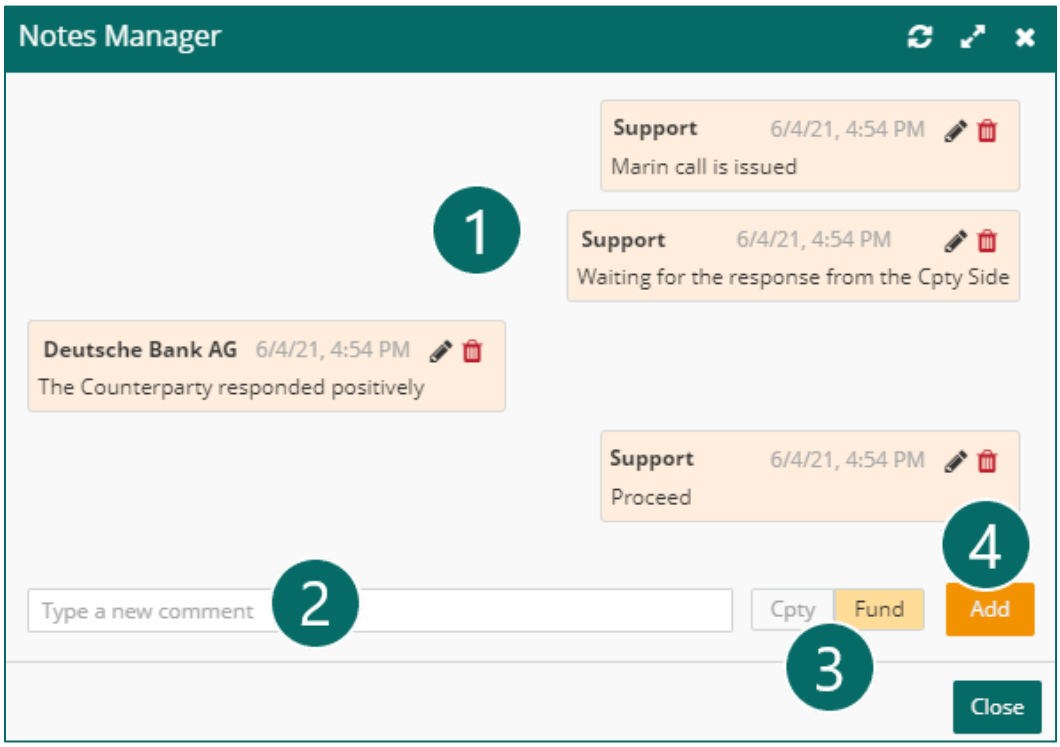
ADD NOTE

Add Note Upper toolbar button allows to attach Counterparty and Fund side notes to the Margin call in a format of chat. Add button calls the *Notes Manager* pop-up screen.

NOTE! It is impossible to add notes for bulk Margin calls. The Notes can be internal and external:

- **Internal notes**: domestic notes that can be reviewed strictly inside the Hazeltree system.
- **External notes**: notes that can be reviewed in both Hazeltree and third-party Acadiasoft platform.

The Notes Manager screen is reviewed below:



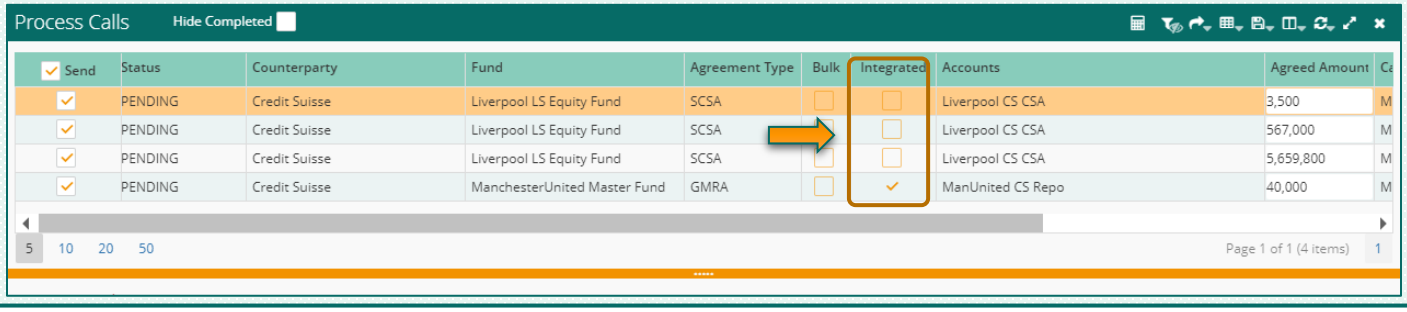
1. **Notes area**: notes assigned to the Margin call in chat format.
2. **Type a new comment**: type a new note here.
3. **Cpty/Fund**: select the side of a new note creator (*Counterparty* or *Fund*).
4. **Add**: press to post the note in the notes area.

MARGIN CALL BULK ACTIONS

Some of the Upper toolbar operational button can be executed against multiple Collateral entries selected on the Call Management grid. These options are:

- **Process Calls**
- **Book Movement**
- **Process Pledges**
- **No Call Received**

Users are able to select multiple Collateral entries and operate with the whole batch independently from the Collateral Agreements integration statuses (*integrated* or *non-integrated*). For example, the Process Calls instrument can be used to issue Margin calls for all four Collateral positions (three are integrated and one is integrated with Acadiasoft):



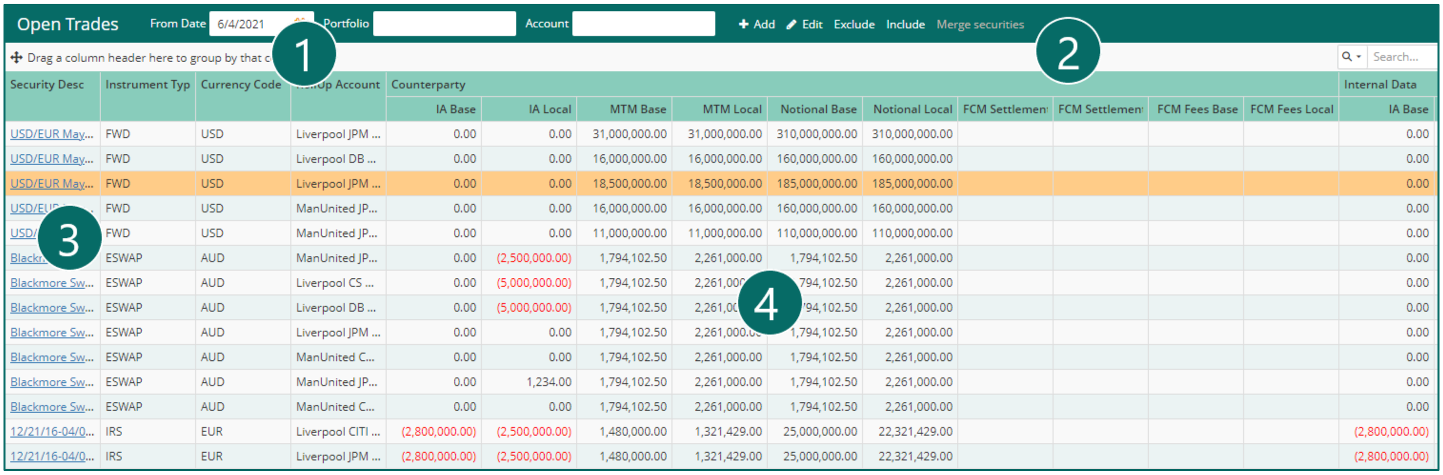
MARGIN CALL BULK ACTIONS (CONTINUATION)

- **Integrated Accounts** have e-mail subject and e-mail body screen parts disabled due to the integration system that does not require custom margin calls letters.
- **Non-integrated Account** have e-mail subject and e-mail body screen parts enabled because outside recipient must be delivered a margin call letter describing Action details.

Open Trades

Open Trades is a Collateral Manager aggregation screen that keeps records of all derivative securities traded by collateral OTC Accounts. Open Trades constitute the values of the Fund side section on the screen Call Management. The data shown on the Open Trades grid is extracted from the incoming feed files on Accounts' position level.

Open Trades screen is reviewed below:



Security Desc	Instrument Typ	Currency Code	…up Account	Counterparty										Internal Data
				IA Base	IA Local	MTM Base	MTM Local	Notional Base	Notional Local	FCM Settlemen	FCM Settlemen	FCM Fees Base	FCM Fees Local	IA Base
USD/EUR May...	FWD	USD	Liverpool JPM ...	0.00	0.00	31,000,000.00	31,000,000.00	310,000,000.00	310,000,000.00					0.00
USD/EUR May...	FWD	USD	Liverpool DB ...	0.00	0.00	16,000,000.00	16,000,000.00	160,000,000.00	160,000,000.00					0.00
USD/EUR May...	FWD	USD	Liverpool JPM ...	0.00	0.00	18,500,000.00	18,500,000.00	185,000,000.00	185,000,000.00					0.00
USD/EU…	FWD	USD	ManUnited JP...	0.00	0.00	16,000,000.00	16,000,000.00	160,000,000.00	160,000,000.00					0.00
USD/…	FWD	USD	ManUnited JP...	0.00	0.00	11,000,000.00	11,000,000.00	110,000,000.00	110,000,000.00					0.00
Black…	ESWAP	AUD	ManUnited JP...	0.00	(2,500,000.00)	1,794,102.50	2,261,000.00	1,794,102.50	2,261,000.00					0.00
Blackmore Sw...	ESWAP	AUD	Liverpool CS ...	0.00	(5,000,000.00)	1,794,102.50	2,261,00…	…794,102.50	2,261,000.00					0.00
Blackmore Sw...	ESWAP	AUD	Liverpool DB ...	0.00	(5,000,000.00)	1,794,102.50	2,261,0…	…94,102.50	2,261,000.00					0.00
Blackmore Sw...	ESWAP	AUD	Liverpool JPM ...	0.00	0.00	1,794,102.50	2,261,000.…	1,794,102.50	2,261,000.00					0.00
Blackmore Sw...	ESWAP	AUD	ManUnited C...	0.00	0.00	1,794,102.50	2,261,000.00	1,794,102.50	2,261,000.00					0.00
Blackmore Sw...	ESWAP	AUD	ManUnited JP...	0.00	1,234.00	1,794,102.50	2,261,000.00	1,794,102.50	2,261,000.00					0.00
Blackmore Sw...	ESWAP	AUD	ManUnited C...	0.00	0.00	1,794,102.50	2,261,000.00	1,794,102.50	2,261,000.00					0.00
12/21/16-04/0...	IRS	EUR	Liverpool CITI ...	(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00					(2,800,000.00)
12/21/16-04/0...	IRS	EUR	Liverpool JPM ...	(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00					(2,800,000.00)

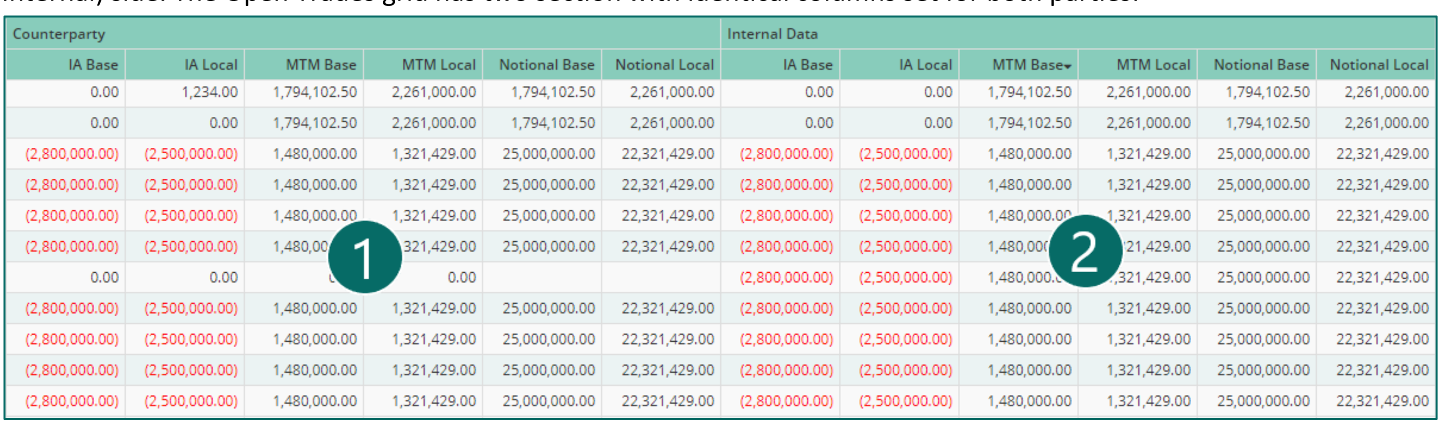
1. **From Date**: select a data to review derivate instruments on the grid for that day.
2. **Upper toolbar**: panel of instruments for operating with the derivative entries. The buttons are available for today's business day only.
3. **Security Description**: a link that allows to open and edit Security instruments in the Security Master Editor screen.
4. **Open Trades grid**: displays all existing derivate instruments and their values.

Open Trades Grid

Open Trades grid contains the total number of derivative instruments traded by collateral OTC Accounts and derivative instruments' parameters extracted from incoming Feed files.

INTERNAL DATA AND COUNTERPARTY SECTION

Open Trades grid shows the derivative instruments parameters that directly impact the Margin call conditions, Collateral Agreements and Margin Rules (including UMR): *Independent Amount Base/Local, Market-To-Market Base/Local, Notional Base/Local, FCM Settlement Base/Local, etc.* These numbers come from two sides: Counterparty side and Fund (or Internal) side. The Open Trades grid has two section with identical columns set for both parties:



Counterparty						Internal Data					
IA Base	IA Local	MTM Base	MTM Local	Notional Base	Notional Local	IA Base	IA Local	MTM Base	MTM Local	Notional Base	Notional Local
0.00	1,234.00	1,794,102.50	2,261,000.00	1,794,102.50	2,261,000.00	0.00	0.00	1,794,102.50	2,261,000.00	1,794,102.50	2,261,000.00
0.00	0.00	1,794,102.50	2,261,000.00	1,794,102.50	2,261,000.00	0.00	0.00	1,794,102.50	2,261,000.00	1,794,102.50	2,261,000.00
(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00	(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00
(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00	(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00
(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00	(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00
(2,800,000.00)	(2,500,000.00)	1,480,00…	…321,429.00	25,000,000.00	22,321,429.00	(2,800,000.00)	(2,500,000.00)	1,480,00…	…21,429.00	25,000,000.00	22,321,429.00
0.00	0.00	…	0.00			(2,800,000.00)	(2,500,000.00)	1,480,000.…	…321,429.00	25,000,000.00	22,321,429.00
(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00	(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00
(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00	(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00
(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00	(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00
(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00	(2,800,000.00)	(2,500,000.00)	1,480,000.00	1,321,429.00	25,000,000.00	22,321,429.00

1. **Counterparty**: OTC values coming from Counterparty feed source (e.g. Accounting system files, Broker files).
2. **Internal Data**: OTC values created directly in the system.

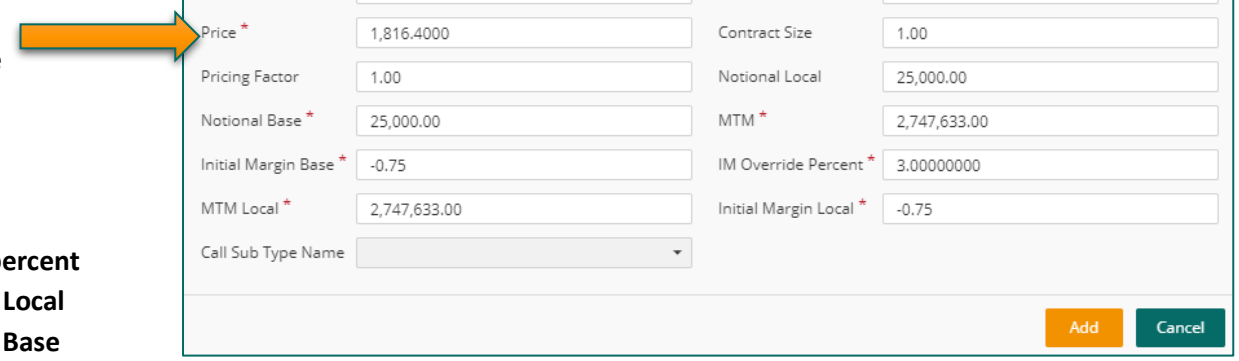
INTERNAL DATA

When Counterparty data is extracted from the Counterparty feed source (e.g. Accounting system files, Broker files), the Internal Data can be set up manually with a help of the Upper toolbar *Add* or *Edit* buttons. Both open the *Open Trade Editor* where the parameters of the trade deal can be settled or edited.

NOTE! Some of the fields are automatically populated or autocorrected by the system according to the data stored in the system or to the embedded calculation formulas. For example, when specifying the *Security* of a *Stock* type, one will get the *Price* field populated automatically with the *Market Data* value.

NOTE! Red star marked* attributes are essential for specification; it is impossible to leave the field blank. When creating an Open Trade user must specify the following attributes:

- **Fund**
- **Custodian**
- **Custodian Account**
- **Security**
- **Security Type**
- **Position direction**
- **Trade Date**
- **Effective Date**
- **Price**
- **Notional Base**
- **Trade Date**
- **FX Rate**
- **MTM**
- **MTM Local**
- **IM Override percent**
- **Initial Margin Local**
- **Initial Margin Base**



MTM CALCULATION

MTM (Market-To-Market) – measure of fair value of accounts that can change over. MTM provides a realistic appraisal of current financial situation. Calculate the MTM values using the below formulas:

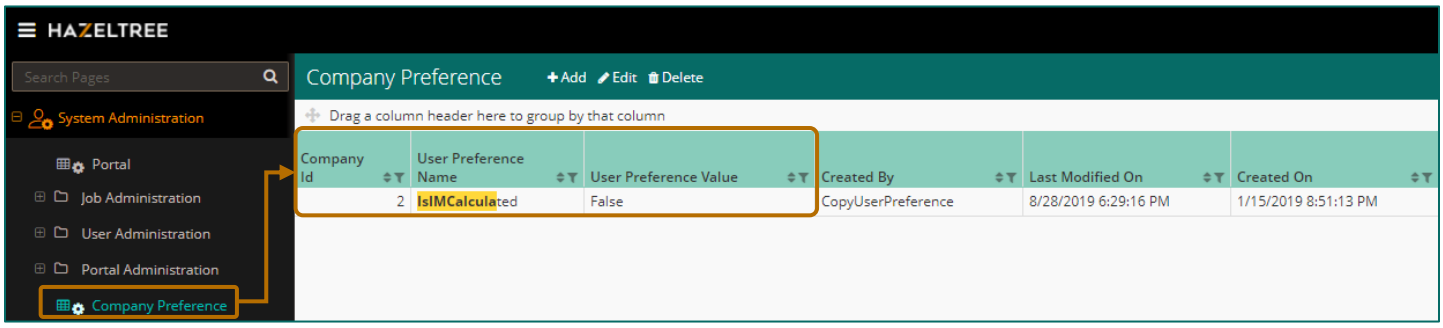
$$MTMLocal = MTM/FXRate$$

$$MTM = MTMLocal * FXRate$$

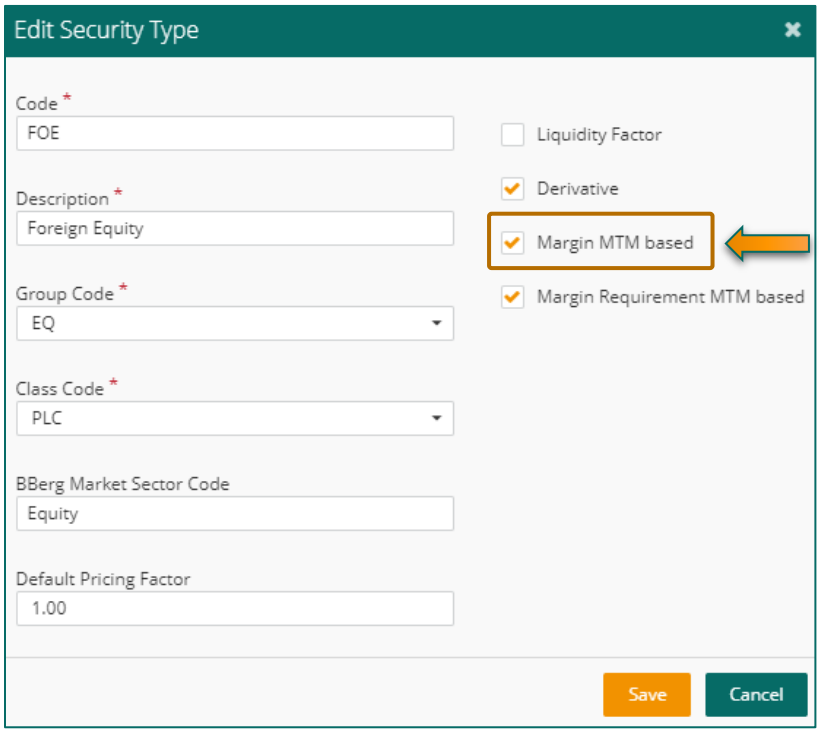
INITIAL MARGIN CALCULATION

Initial margin – percentage of the purchase price of securities that investor must pay for with his own cash or marginable securities. To calculate Initial Margin values, user has to take two variables into account:

- **IsIMCalculated**: a Company Preference Boolean value (*True/False*). Location: *System Administration module > Company Preference > **IsIMCalculated** User Preference Name*



- **IsMarginMTMBased**: Security Type status for specific Security. Location: *Reference Data module > Security Master > Security Type > Security details >* ***Margin MTM based*** *checkbox.*



Considering these two variables, calculate Initial Margin and Initial Margin Local using below formulas:

- If **IsIMCalculated** is True, calculate Initial Margin Local:

$$Notional = IF\ IsMarginMTMBased\ THEN\ MTM\ ELSE\ NotionalAmountBase$$

$$InitialMarginLocal = (Math.Abs(Notional * IMOverridePercent) * -1) / FXRate$$

- If **IsIMCalculated** is False, calculate Initial Margin:

$$InitialMargin = InitialMarginLocal * FXRate$$

IM OVERRIDE PERCENT CALCULATION

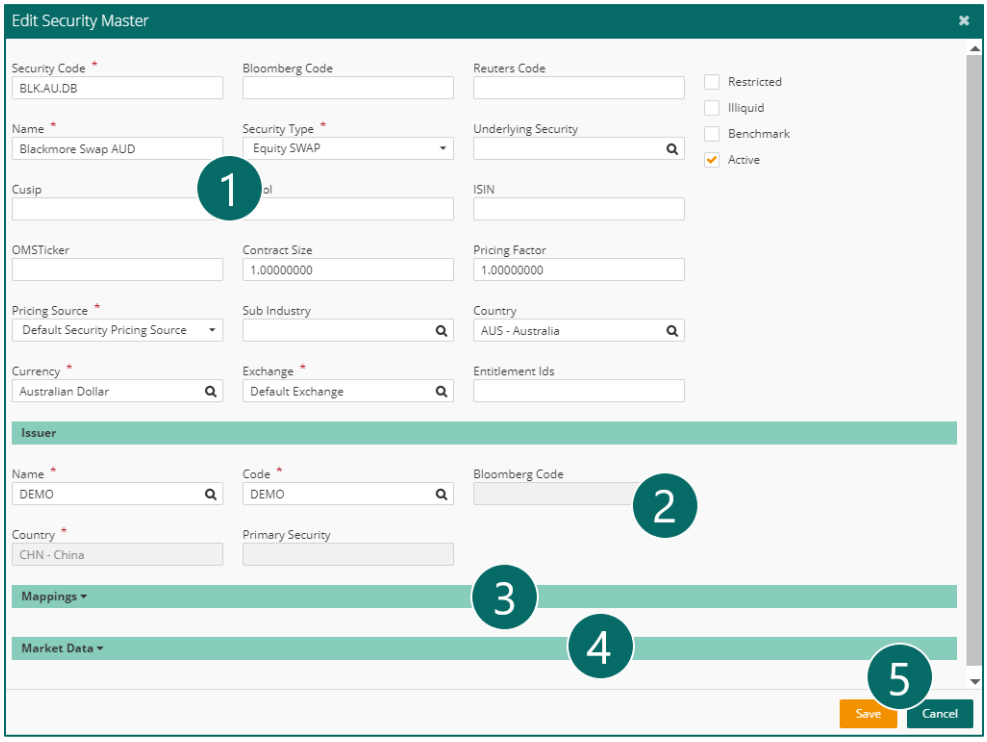
IM Override Percent – value that is calculated basing on the percent specified in corresponding Agreement. This value can be edited for selected position with custom override percent. Calculate IM Override Percent using below formulas:

$$Notional = IF\ IsMarginMTMBased\ THEN\ MTMLocal\ ELSE\ NotionalAmountBase$$

$$IMOverridePercent = IF\ notional\ != 0\ THEN\ Math.Abs(InitialMarginLocal * 100 / notional)$$

SECURITY DESCRIPTION COLUMN

Security Description column shows the name/description of the Security that is the subject of the trade operation. The description contains a hyperlink that allows users to review the derivate OTC instrument through *Security Master* pop-up screen. The Security Master screen allows to edit derivate instrument's parameters directly from the Open Trades screen.



1. **Basic parameters**: primary settings of the Security (*Code, Name, Type, Cusip, OMS Ticker, ISIN, Contract size, etc.*)
2. **Issuer**: data of the Issuer institute (*Name, Code, Bloomberg Code, Country, Primary Security*)
3. **Mappings**: list of instruments mapped to this Security.
4. **Market Data**: Stock Exchange data of the Security.

INFO! The Security Master instrument is a basic tool for working with Securities. It is located in the *Reference Data module > Security Master folder > Security Master List*. The interface of the primary Security Master screen is slightly different but has the same set of fields as the Open Trades version.

OPEN TRADES UPPER TOOLBAR

Open Trades Upper toolbar contains buttons for operating with displayed derivative instruments. The buttons are available for today's business day only.

The Open Trades Upper toolbar is reviewed below:

1. **Portfolio**: use to filter out the trades entries by Portfolio.
2. **Account**: use to filter out the trades entries by Account.
3. **Add**: press to create a new Open Trade entry.
4. **Edit**: select an Open Trade on the grid and press to edit it.

5. **Exclude/Include**: select an Open Trade on the grid and press to exclude or include it in the Margin call calculations.
6. **Merge Securities**: select two Open Trades and press the button to merge them into one.

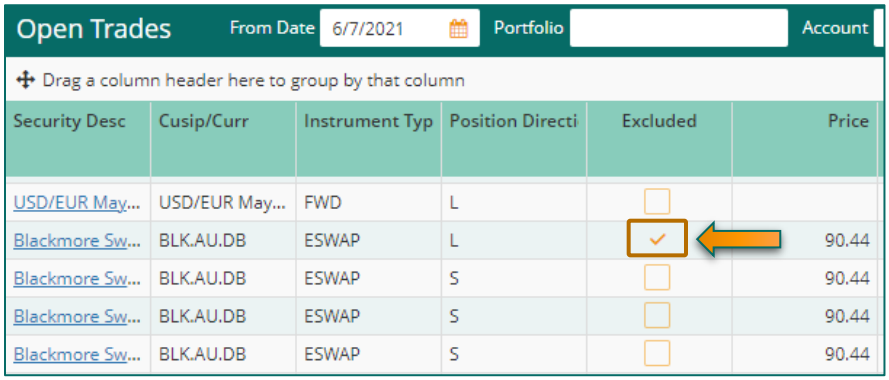
ADD/EDIT

Add and **Edit** Upper toolbar buttons call **New** and **Edit Open Trade** pop-up screens correspondingly. Use these buttons to create new Open Trade or edit existing Open Trades displayed on the grid.

EXCLUDE/INCLUDE

Exclude and **Include** Upper toolbar buttons change the state of the Open Trade in turns of their collateral Portfolio. The state is reflected in the *Excluded* column of the grid. Excluded Open Trades are not considered to be a part of position of the Collateral Account and do not participate in Margin calls calculation.

NOTE! Exclusion does not equal removal. The excluded Open Trades are not ultimately removed from the Open Trades grid.



To include an excluded Open Trades back into position of the Collateral Account, press *Include* Upper toolbar button. The state Excluded is switched to False and Open Trade is included in Margin call calculations again.

MERGE SECURITIES

Merge Securities is an option for fixing an occasional issue when one Security is displayed on the screen as two separate Securities. Commonly, this discrepancy occurs when the Security has a different naming in different source systems (e.g. Counterparty's accounting system has the Security naming *PRLR100921* and the Internal Data has it as *PRLD-10092021*).

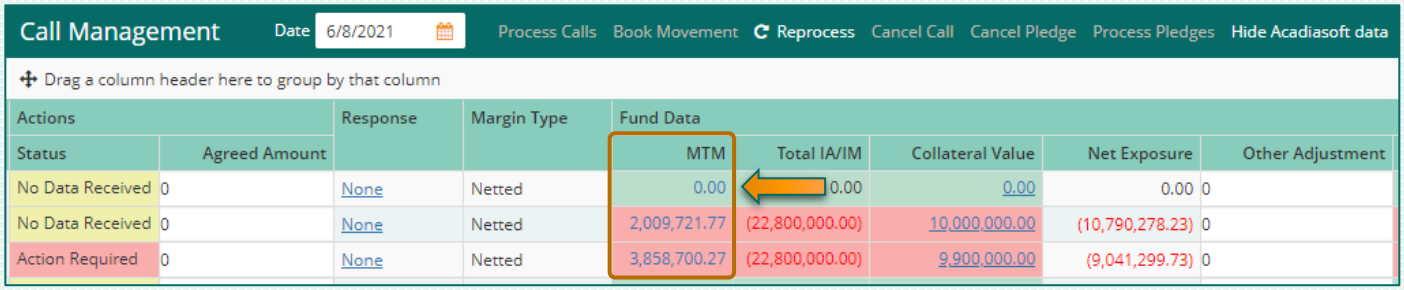
To fuse the Securities that actually represent one, select both on the grid and press the Merge Securities button. Select one Security Code to keep and one to remove. **NOTE!** The removed Security will be automatically mapped to the Security you chose to keep.

IMPORTANT! Be very accurate using this option. Merging two Securities that were not supposed to be merged can lead to inconsistency in collateral data and malfunction on all levels.

If you merged two Securities erroneously, it can be corrected in the *Reference Data module > Security Master folder > select Security > choose Mapped Securities tab*. Exclude incorrectly mapped Security from the mapped list and the Open Trade will be restored automatically.

MTM COLUMN LINK TO OPEN TRADES

The Call Management grid has an **MTM column** inside the Fund Data section. It shows the Market-To-Market value composed from the Open Trades of the Collateral Account within the Collateral Agreement. The value represents a link that allows users to jump directly to the Open Trades screen to review the derivative instruments traded by selected Collateral Account.



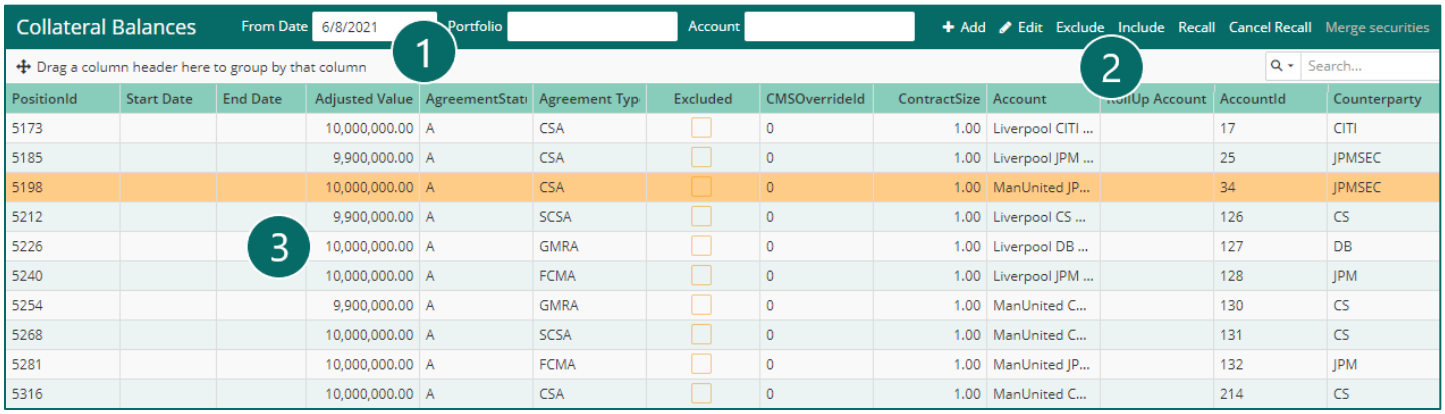
Actions		Response	Margin Type	Fund Data				
Status	Agreed Amount			MTM	Total IA/IM	Collateral Value	Net Exposure	Other Adjustment
No Data Received	0	None	Netted	0.00	0.00	0.00	0.00	0
No Data Received	0	None	Netted	2,009,721.77	(22,800,000.00)	10,000,000.00	(10,790,278.23)	0
Action Required	0	None	Netted	3,858,700.27	(22,800,000.00)	9,900,000.00	(9,041,299.73)	0

NOTE! The Open Trades derivatives can display MTM values different from the MTM values shown in the Fund Data section of the Call Management screen. This can occur when the Feed files is extracted on Account's level; therefore the data has priority over Open Trades calculated value which data is extracted from incoming Feed files on Accounts' Position level.

COLLATERAL BALANCES

Collateral Balances is a Collateral Manager screen that displays positions of the Collateral Accounts that provide maintenance for traded OTC derivative instruments. Collateral Balances data is extracted from incoming Feed files on Accounts' position level.

The Collateral Balances screen is reviewed below:



1. **From Date**: select a data to review the collateral positions on the grid for that day.
2. **Upper toolbar**: contains buttons for operating with displayed collateral positions. The buttons are available for today's business day only.
3. **Collateral Balances grid**: displays the collateral positions and their parameters.

COLLATERAL BALANCES UPPER TOOLBAR

Collateral Balances Upper toolbar contains buttons for operating with collateral positions. The buttons are available for today's business day only.

Collateral Balances Upper toolbar is reviewed below:

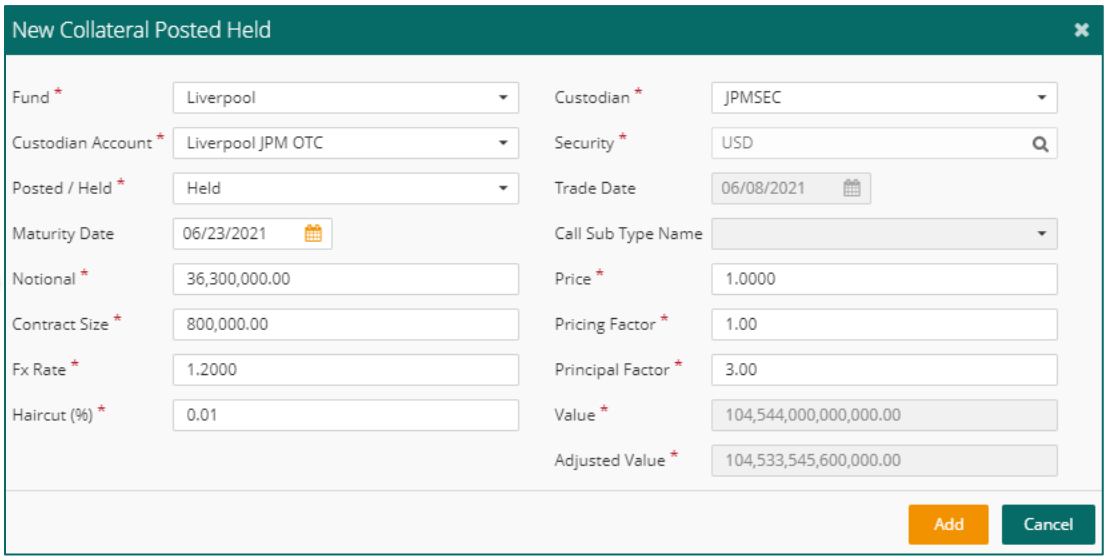
1. **Portfolio**: use to filter out the trades entries by Portfolio.
2. **Account**: use to filter out the trades entries by Account.
3. **Add**: press to create a new Open Trade entry.
4. **Edit**: select an Open Trade on the grid and press to edit it.
5. **Exclude/Include**: select an Open Trade on the grid and press to exclude or include it in the Margin call calculations.
6. **Recall**: press to initiate the procedure of Recall (substitution) of the selected balance entry.
7. **Cancel Recall**: select the balance entry with initiated Recall and press to cancel it.
8. **Merge Securities**: select two Open Trades and press the button to merge them into one.

ADD/EDIT

Add and **Edit** Upper toolbar buttons call **New** and **Edit Collateral Posted Held** pop-up screens correspondingly. Use these instruments to create new collateral position or edit an existing collateral position.

NOTE! Red star marked* attributes are essential for specification; it is impossible to leave the field blank. When creating a collateral position user must specify the following attributes:

- **Fund**
- **Custodian**
- **Custodian Account**
- **Security**
- **Posted/Held**
- **Notional**
- **Price**
- **Contact Size**
- **Pricing Factor**
- **FX Rate**
- **Principal Factor**
- **Value**
- **Haircut**
- **Adjusted Value**

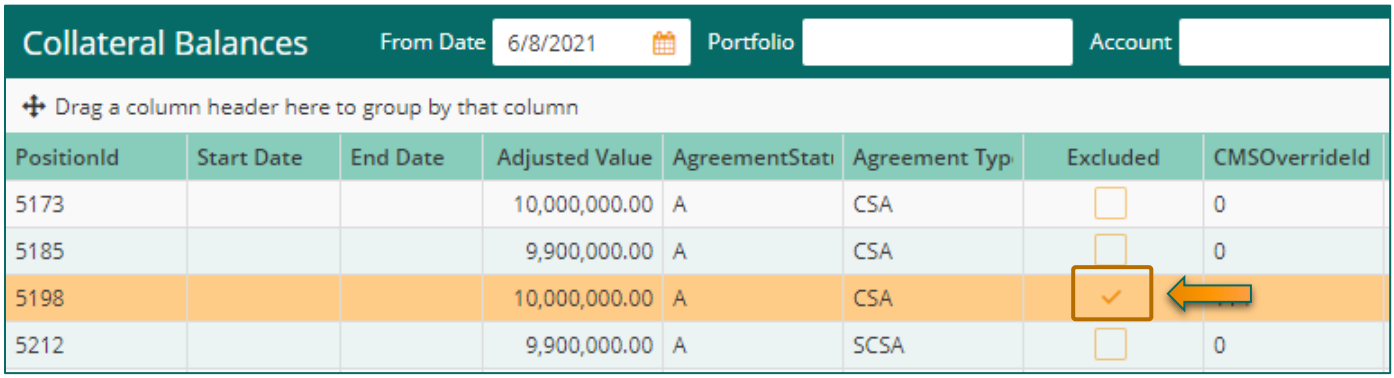


NOTE! Some of the fields are automatically populated by the system according to the embedded calculation formulas. For example, when specifying the *Notional* and *Contract Size*, one will get the *Value* and *Adjusted Value* fields populated automatically.

EXCLUDE/INCLUDE

Exclude and **Include** Upper toolbar buttons change the state of the collateral position which indicates if collateral positions is a part of position of a Collateral Account and participates in Margin call calculation. The value is reflected in Excluded column of the Collateral Balances grid.

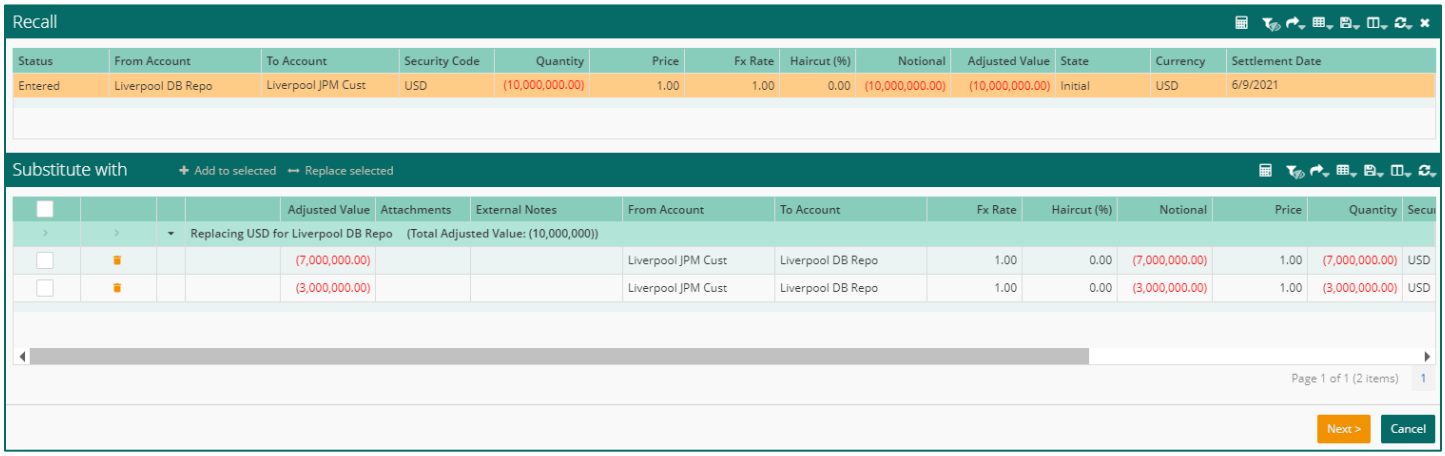
NOTE! Exclusion does not equal removal. Excluded collateral position are not ultimately removed from the Collateral Balances grid.



To include an excluded collateral position back, press *Include* Upper toolbar button. The state Excluded is switched to False and the collateral position is included in Margin call calculations again.

RECALL

Recall button allows users to substitute the collateral balance position with another collateral position (or positions). It is frequently used when the position is desired to be split into several in order to carry less money load. The Recall button open the Recall pop-up screen where users can operate.



NOTE! To cancel the requested Recall, select the collateral position on the grid and use the *Cancel Recall* Upper toolbar button.

MERGE SECURITIES

Merge Securities is an option for fixing an occasional issue when one Security is displayed on the screen as two separate Securities. Commonly, this discrepancy occurs when the Security has a different naming in different source systems (e.g. Counterparty's accounting system has the Security naming *PRLR100921* and the Internal Data has it as *PRLR-10092021*).

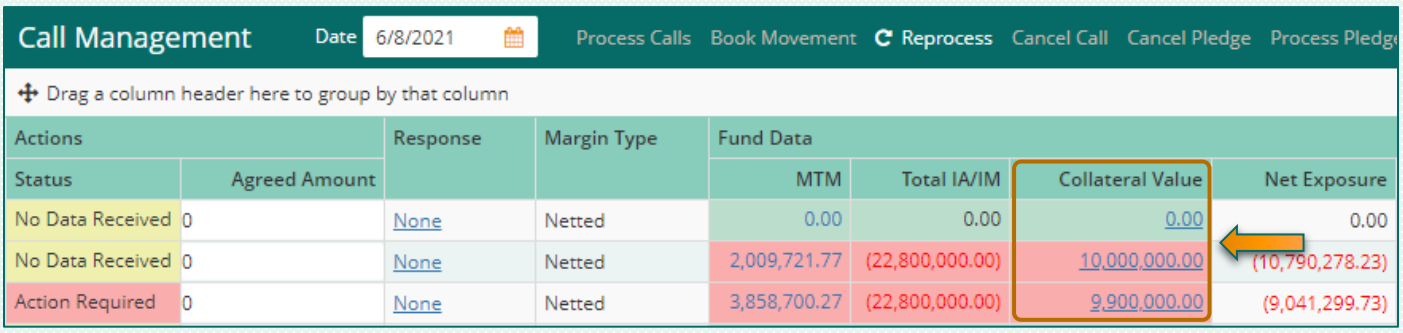
To fuse the Securities that actually represent one, select both on the grid and press the Merge Securities button. Select one Security Code to keep and one to remove. **NOTE!** The removed Security will be automatically mapped to the Security you chose to keep.

IMPORTANT! Be very accurate using this option. Merging two Securities that were not supposed to be merged can lead to inconsistency in collateral data and malfunction on all levels.

If you merged two Securities erroneously, it can be corrected in the *Reference Data module > Security Master folder > select Security > choose Mapped Securities tab*. Exclude incorrectly mapped Security from the mapped list and the Open Trade will be restored automatically.

COLLATERAL VALUE COLUMN LINK TO COLLATERAL BALANCES

The Call Management grid has a **Collateral Value column** inside the Fund Data section. It shows the value composed from the Collateral Balances of the Collateral Account within the Collateral Agreement. The value represents a link that allows users to jump directly to the Collateral Balances screen to review the balances.



NOTE! The Open Trades derivatives can display MTM values different from the MTM values shown in the Fund Data section of the Call Management screen. This can occur when the Feed files is extracted on Account's level; therefore the data has priority over Open Trades calculated value which data is extracted from incoming Feed files on Accounts' Position level.

COLLATERAL MANAGER PERMISSIONS

Collateral Manager module permissions are regulated with the standard Application Features. The Application Features are managed on the Role Privilege screen. It can be accessed via following path: *System Administration module > User Administration folder > Role Privilege screen*.

NOTE! Collateral Agreements permissions open access to the tools inside the *Reference Data module*. Collateral Manager permissions open access to the instruments of the *Collateral Manager module*.

COLLATERAL AGREEMENTS

Application Feature	Screen	Description
View FCMA	Agreement List	Permission to view FCMA Agreement option in main menu
Create FCMA	Agreements/FCMA	User is able to create FCMA Agreements
View SCSA	Agreement List	Permission to view SCSA Agreement option in main menu
Create SCSA	Agreements/SCSA	User is able to create SCSA Agreements
Approve SCSA	Agreement List	User is able to approve created SCSA Agreements
View CSA	Agreements/CSA	Permission to view CSA Agreement option in main menu
Create CSA	Agreements/CSA	User is able to create CSA Agreements
Approve CSA	Agreement List	User is able to approve created CSA Agreements
View GMRA	Agreement List	Permission to view GMRA Agreement option in main menu
Create GMRA	Agreements/GMRA	User is able to create GMRA Agreements
Approve GMRA	Agreement List	User is able to approve created GMRA Agreements
View Collateral Agreement Types	Agreements folder	Permission to view and utilize types of Collateral Agreements
Edit Collateral Templates	Collateral Templates	Permission to create and edit Collateral Templates for Margin calls.

COLLATERAL MANAGER

Application Feature	Screen	Description
View Margin Call	Call Management	Permission to view and access Call Management screen
View Open Trades	Open Trades	Permission to view and access Open Trades screen
View Widgets Collateral	Portal	Permission to view and access and utilize Portal screen
View Collateral Posted Held	Collateral Balances	Permission to view and access Collateral Balances screen
Edit Margin Call	Call Management	Activates Upper toolbar buttons: • Process Calls • ReProcess • Cancel Call • No Call Received • Add Note
Edit Open Trades	Open Trades	Activates Upper toolbar buttons: • Add • Edit • Exclude • Include
Edit Interest Sheet	Interest Accruals	Activates **Edit** Upper toolbar button.
Edit Collateral Posted Held	Collateral Balances	Activates Upper toolbar buttons: • Add • Edit • Exclude • Include
Margin Call Book Movement	Call Management	Activates **Book Movement** Upper toolbar button. User is able to access Book Movement pop-up screen

Edit Collateral Type	Open Trades	Activates **Move to Margin** Upper toolbar button
Edit Recall	Collateral Balances	Activates Upper toolbar buttons: • Recall • Cancel Recall
View Suggested Actions Blotter Collateral	Optimizer Blotter	Permission to view Suggested Actions produced with the Collateral Solution

APPENDIX

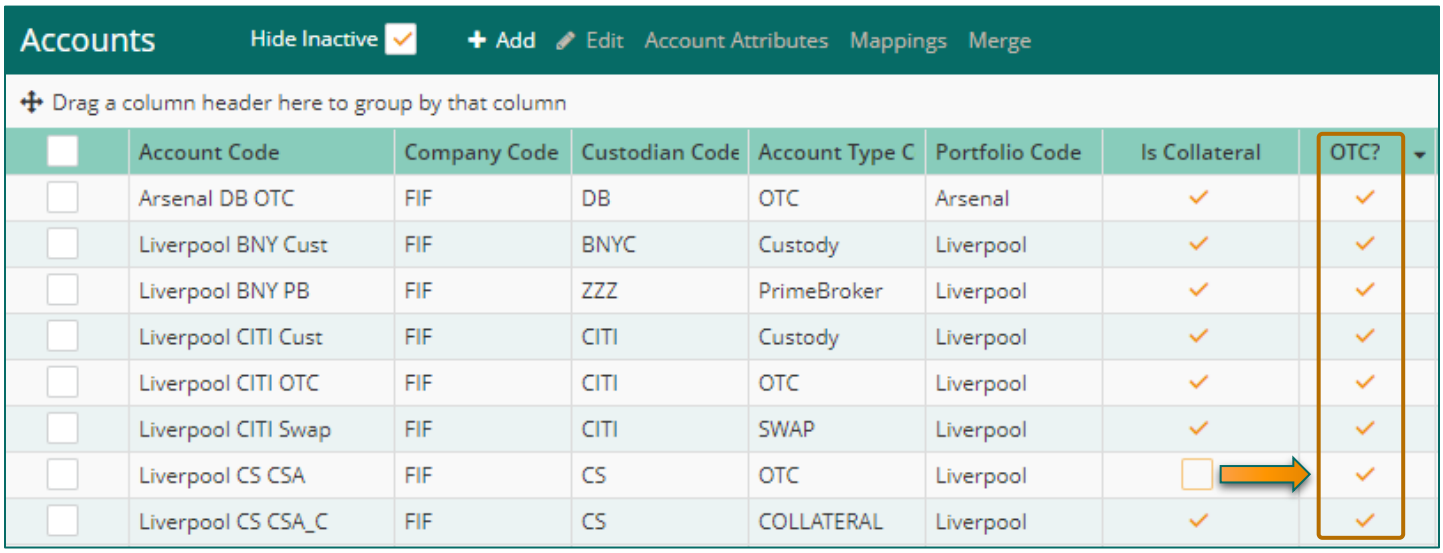
This section contains information conjugated with the Collateral Manager module or Collateral instruments across the Hazeltree platform.

ANNEX 1: ACCOUNT SETTING FOR OPEN TRADES & COLLATERAL BALANCES

Both **Open Trades** entries and **Collateral Balances** entries are created with the *Add* Upper toolbar button. In both cases creation of a new entry implies specification of *Fund*, *Custodian* and *Account*: they are marked with red star* and must be specified along with other parameters.

IMPORTANT! Not all Accounts are available for selection when creating a new Open Trade or Collateral Balance entry. The set of available Accounts is constituted from Accounts with the **OTC** parameter enabled.

To check if an Account is marked with the OTC parameter proceed to the *Reference Data module > Portfolio/Custodian folder > Account screen*. The OTC Account have a checkmark in the OTC column.



Account Code	Company Code	Custodian Code	Account Type C	Portfolio Code	Is Collateral	OTC?
Arsenal DB OTC	FIF	DB	OTC	Arsenal	✓	✓
Liverpool BNY Cust	FIF	BNYC	Custody	Liverpool	✓	✓
Liverpool BNY PB	FIF	ZZZ	PrimeBroker	Liverpool	✓	✓
Liverpool CITI Cust	FIF	CITI	Custody	Liverpool	✓	✓
Liverpool CITI OTC	FIF	CITI	OTC	Liverpool	✓	✓
Liverpool CITI Swap	FIF	CITI	SWAP	Liverpool	✓	✓
Liverpool CS CSA	FIF	CS	OTC	Liverpool		✓
Liverpool CS CSA_C	FIF	CS	COLLATERAL	Liverpool	✓	✓

To change the OTC setting, select Account on the grid and take it on edit. Mark the checkmark **OTC** under the *Details* tab and save changes.

NOTE! Account changes refer to sensitive data modification and require approval from other Hazeltree users with administrator rights. The approval routine depends on the *Approval Workflow Configuration* forged for the company.

ANNEX 2: MARGIN CALL STATUSES

Margin call entries on the Call Management screen can take different statuses according to the data condition, required actions or last performed actions. The table below contains all possible statuses that can be assigned to the entries.

Status	Description
None-integrated workflow statuses	
No Data Received	If IA, MTM and CV are 0 for specified valuation agent
No Action Required	If IA, MTM and CV are not 0 for specified valuation agent, but call amount is belowe MTA
Action Required	If IA, MTM and CV are not 0 for specified valuation agent, but call amount is over MTA
Call Issued - Pending Response	Not integrated call issued (email sent)

No Call Received	Status manually set to override Action Required or any other not integrated status (using same named button in CM)
Agree in Full	Agreed in Full response email sent
Partially Agree	Partially Agree response email sent without any difference type checkbox set
Partially Agree - Collateral Diff	Partially Agree response email sent with Collateral difference type checkbox set
Partially Agree - MTM Diff	Partially Agree response email sent with MTM difference type checkbox set
Partially Agree - IA Diff	Partially Agree response email sent with IA difference type checkbox set
Partially Agree - MTM Diff & Collateral Diff	Partially Agree response email sent with Collateral and MTM difference type checkboxes set
Partially Agree - MTM Diff & IA Diff	Partially Agree response email sent with MTM and IA difference type checkboxes set
Partially Agree - Collateral Diff & IA Diff	Partially Agree response email sent with Collateral and IA difference type checkboxes set
Partially Agree - MTM Diff & Collateral Diff & IA Diff	Partially Agree response email sent with all difference type checkbox set
Dispute	Dispute response email sent without any difference type checkbox set
Dispute - Collateral Diff	Dispute response email sent with Collateral difference type checkbox set
Dispute - MTM Diff	Dispute response email sent with MTM difference type checkbox set
Dispute - IA Diff	Dispute response email sent with IA difference type checkbox set
Dispute - MTM Diff & Collateral Diff	Dispute response email sent with Collateral and MTM difference type checkboxes set
Dispute - MTM Diff & IA Diff	Dispute response email sent with MTM and IA difference type checkboxes set
Dispute - Collateral Diff & IA Diff	Dispute response email sent with Collateral and IA difference type checkboxes set
Dispute - MTM Diff & Collateral Diff & IA Diff	Dispute response email sent with all difference type checkboxes set
Confirmed	Transactions are created (after booking movements)
Completed	We accepted Counterparty pledge(s) via Process Pledge, transactions should be still approved manually if required
Integrated workflow statuses (Acadiasoft) Each status has 3 parts: *<call status>_<call type>_<call direction>*, where: • *Call status* is workflow status of call • *Call type* could be "Netted" for netted agreement and "Initial" or "Variation" for segregated agreement • *Call Direction* could be "Incoming" if Counterparty calls us or "Outgoing" if we call Counterparty	
Incoming Direction	
Received_Netted_Incoming	Counterparty sent us call for Netted agreement
Received_Initial_Incoming	Counterparty sent us call for Initial part of segregated agreement
Received_Variation_Incoming	Counterparty sent us call for Variation part of segregated agreement
Agreed_Netted_Incoming	Agree message sent for a call for Netted agreement
Agreed_Initial_Incoming	Agree message sent for a call for Initial part of segregated agreement
Agreed_Variation_Incoming	Agree message sent for a call for Variation part of segregated agreement
Partial Agreed_Netted_Incoming	Partial Agree message sent for a call for Netted agreement
Partial Agreed_Initial_Incoming	Partial Agree message sent for a call for Initial part of segregated agreement
Partial Agreed_Variation_Incoming	Partial Agree message sent for a call for Variation part of segregated agreement
Disputed_Netted_Incoming	Dispute message sent for a call for Netted agreement
Disputed_Initial_Incoming	Dispute message sent for a call for Initial part of segregated agreement
Disputed_Variation_Incoming	Dispute message sent for a call for Variation part of segregated agreement
Pledged_Netted_Incoming	Pledge(s) sent for a call for Netted agreement (via Book Movement screen, and transactions are created)
Pledged_Initial_Incoming	Pledge(s) sent for a call for Initial part of segregated agreement (via Book Movement screen, and transactions are created)
Pledged_Variation_Incoming	Pledge(s) sent for a call for Variation part of segregated agreement (via Book Movement screen, and transactions are created)
Pledge Rejected_Netted_Incoming	Counterparty rejected our pledge(s) for a call for Netted agreement
Pledge Rejected_Initial_Incoming	Counterparty rejected our pledge(s) for a call for Initial part of segregated agreement
Pledge Rejected_Variation_Incoming	Counterparty rejected our pledge(s) for a call for Variation part of segregated agreement
Cancelled_Initial_Incoming	Counterparty cancelled a call for Netted agreement

Cancelled_Netted_Incoming	Counterparty cancelled a call for Initial part of segregated agreement
Cancelled_Variation_Incoming	Counterparty cancelled a call for Variation part of segregated agreement
Completed	We accepted Counterparty pledge(s) via Process Pledge, transactions should be still approved manually if required
Outgoing Direction	
Received_Netted_Outgoing	We sent Counterparty call for Netted agreement
Received_Initial_Outgoing	We sent Counterparty call for Initial part of segregated agreement
Received_Variation_Outgoing	We sent Counterparty call for Variation part of segregated agreement
Agreed_Netted_Outgoing	Agree message received from Counterparty for a call for Netted agreement
Agreed_Initial_Outgoing	Agree message received from Counterparty for a call for Initial part of segregated agreement
Agreed_Variation_Outgoing	Agree message received from Counterparty for a call for Variation part of segregated agreement
Partial Agreed_Netted_Outgoing	Partial Agree message received from Counterparty for a call for Netted agreement
Partial Agreed_Initial_Outgoing	Partial Agree message received from Counterparty for a call for Initial part of segregated agreement
Partial Agreed_Variation_Outgoing	Partial Agree message received from Counterparty for a call for Variation part of segregated agreement
Disputed_Netted_Outgoing	Dispute message received from Counterparty for a call for Netted agreement
Disputed_Initial_Outgoing	Dispute message received from Counterparty for a call for Initial part of segregated agreement
Disputed_Variation_Outgoing	Dispute message received from Counterparty for a call for Variation part of segregated agreement
Pledged_Netted_Outgoing	Pledge(s) received from Counterparty for a call for Netted agreement (they could be Accepted or Rejected via Process Pledge screen)
Pledged_Initial_Outgoing	Pledge(s) received from Counterparty for a call for Initial part of segregated agreement (they could be Accepted or Rejected via Process Pledge screen)
Pledged_Variation_Outgoing	Pledge(s) received from Counterparty for a call for Variation part of segregated agreement (they could be Accepted or Rejected via Process Pledge screen)
Pledge Rejected_Netted_Outgoing	We rejected pledge(s) sent by Counterparty for a call for Netted agreement
Pledge Rejected_Initial_Outgoing	We rejected pledge(s) sent by Counterparty for a call for Initial part of segregated agreement
Pledge Rejected_Variation_Outgoing	We rejected pledge(s) sent by Counterparty for a call for Variation part of segregated agreement
Cancelled_Netted_Outgoing	We cancelled a call for Netted agreement
Cancelled_Initial_Outgoing	We cancelled a call for Initial part of segregated agreement
Cancelled_Variation_Outgoing	We cancelled a call for Variation part of segregated agreement
Completed	Counterparty accepted our pledge(s), transactions should be still approved manually if required