



Eurex Clearing C7

C7 - Collateral Management Functional Reference Guide

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Change History

Date	Change
26 June 2017	Initial version
30 July 2018	Update of Segregation models (chapter 4) Changes valid from 6 August / 17 September 2018
27 August 2018	Update of Cash deposits (chapter 7.1.1). Changes valid from 3 September / 22 October 2018
22 February 2019	Update of collateral transfer instructions by optional using a "Future Value Date" (chapter 7.)
08 April 2019	Update to account for: (i) Introduction of optional "Future Value Date" for collateral transactions (chapter 7.) (ii) Re-activation of PCB in USD (iii) Introduction of LSOC
16 September 2019	Update of automated processing of Permanent Cash Holdings for USD
01 April 2020	Update
04 August 2020	Update to account for introduction of Excess Collateral Pool

Date	Release	Change
25 January 2021	7.1	Update to account for optional additional cash account for intraday margin calls for Basic Clearing Members
28 June 2021	8.0	No update for C7 Release 8.0
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Abbreviations

Term	Description
BCM	Basic Clearing Member (= ISA Direct Customer)
CA	Clearing Agent
CBF	Clearstream Banking Frankfurt
CBL	Clearstream Banking Luxembourg
CCP	Central Counterparty
CE(S)T	Central European (Summer) Time
CM	Clearing Member
CmaX	Collateral Management System of CBL
CSD	Central Securities Depository (e.g. CBF)
DC	Direct Client
DCM	Direct Clearing Member
FoP	Free of Payment
GCM	General Clearing Member
ICM	Individual Clearing Model
ICSD	International Central Securities Depository (e.g. CBL)
ISIN	International Securities Identification Number
LSOC	Legally Segregated Operationally Commingled
NCM	Non-clearing Member
RC	Registered Customer
SC	Specific Client
STP	Straight-through processing
UTC	Coordinated Universal Time
Xemac	Collateral Management System of CBF

1 Introduction

This document provides an overview of the functionality made available with C7 release 4.0 onwards. This release was dedicated entirely to the porting of collateral management functions from Eurex Classic to C7 and was introduced in December 2017.

Please note that since the collateral management functionalities are largely distinct from other C7 functionalities, this functional reference has been created as a stand-alone document dedicated to collateral management functionalities only.

For detailed information on the C7 Clearing GUI, please refer to the C7 Clearing GUI - User Manual, which is available for download on the Eurex Clearing website www.eurex.com/ec-en/ under the following path:

Tech > C7 > System documentation > Eurex Clearing GUIs

Throughout this document, reference is made to a “member” which generally means a user of the system/C7 Clearing GUI. In most cases, a member can be a pool sponsor or a pool owner as the user of the system/ C7 Clearing GUI. In cases where a differentiation needs to be made between the role of sponsor vs. owner (e.g. sponsor approval is required), the terms sponsor and/or owner will be used explicitly. Additionally, the terms clearing house, member, sponsor and owner can also refer to the corresponding user (i.e. employee) within that organization.

1.1 Audience

This document is intended for all members and vendors intending to make use of the C7 collateral management services and serves as an overview of how to use the service. It assumes that the reader has a basic understanding of the clearing and collateral management functionalities and the systems offered by Eurex Clearing.

1.2 Conventions used in this document

Cross-references to other chapters within this document are always clickable, but not marked separately.

Hyperlinks to websites are underlined.

2 Interfaces

2.1 C7 Clearing GUI for collateral management services

There is a designated section of the C7 Clearing GUI for collateral management services. Throughout this document, 'C7 Clearing GUI' stands for this very functionality. Members can use the C7 Clearing GUI for all collateral management services in all collateral pools.

For detailed information on the C7 Clearing GUI, please refer to the C7 Clearing GUI - User Manual, which is available for download on the Eurex Clearing website www.eurex.com/ec-en/ under the following path:

Tech > C7 > System documentation > Eurex Clearing GUIs

Reports

Reports are solely distributed via the Common Report Engine. Reports newly introduced since C7 release 3.0 are available in the XML and CSV file formats. Full details on report structures and XSD schema files are available on the Eurex Clearing website in the Eurex XML Reports - Reference Manual. For further information on the Common Report Engine, please refer to the Common Report Engine (CRE), User Guide.

All documents are available on the Eurex Clearing website www.eurex.com/ec-en/ under the following path:

Tech > C7 > System documentation

2.2 System time

C7 runs in UTC and displays all timestamps in UTC. This applies also to the C7 Clearing GUI for collateral management.

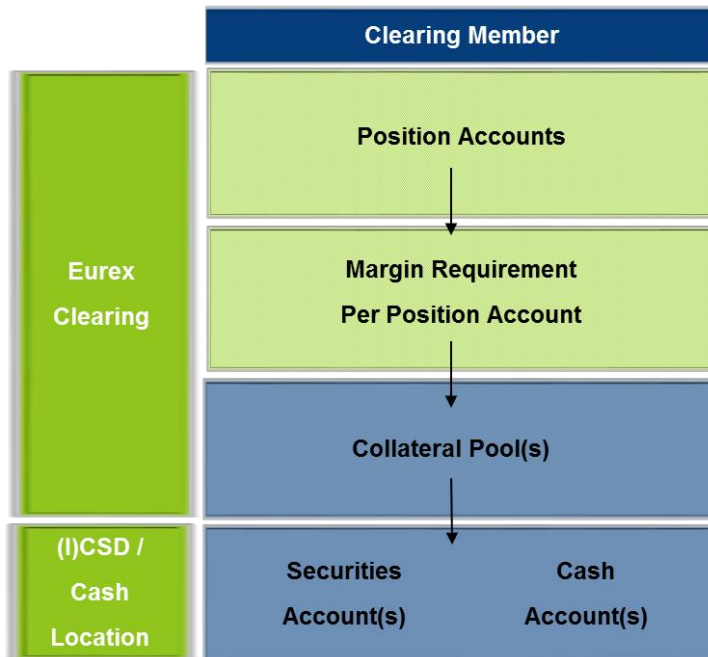
For regulatory reporting purposes, some reports feature timestamps converted to Frankfurt local time, i.e. CE(S)T.

For details on all reports, please consult the Eurex Clearing XML Reports - Reference Manual.

3 Client asset protection and collateral pool concept

Eurex Clearing offers various client asset protection (CAP) models where it is possible to segregate a clearing member's own collateral assets from its clients' assets or separate clients' assets from other clients' assets. Segregating clients' assets allows for a high recoverability of client collateral in case the clearing member goes into default.

CAP is achieved through the concept of collateral pools in the collateral application. The collateral pools concept ripples through all layers of Eurex Clearing's risk and collateral management processes:



- The trades concluded on Eurex Clearing associated markets are reflected on the relevant position accounts, i.e. the proprietary accounts P₁ and P₂, the market making accounts M₁ and M₂ and the agent accounts A₁..A_n or flexible accounts.
- Eurex Clearing's risk management calculates the margin requirements per risk netting unit (RNU) which includes one or multiple position account(s) and, if applicable, performs netting of margin requirements according to the associated position accounts. The position accounts/RNUs are associated to one and only one collateral pool. Consequently, Eurex Clearing's risk management applications aggregate the margin requirements of the relevant position accounts into a margin requirement per collateral pool.
- A collateral pool holds securities and/or cash collateral used to cover the margin requirements associated to that pool.
 - Security collateral is held in dedicated securities accounts at the respective (I)CSD and it is pledged or title transferred to Eurex Clearing. Alternatively, it can be provided via the triparty collateral management systems CmaX (CBL) or Xemac (CBF).
 - An (I)CSD account is associated to a collateral pool. In some scenarios, a single (I)CSD account may source multiple collateral pools. If so, asset tagging is required in order to assign the specific ISIN to the target collateral pool.
 - Cash collateral is provided to Eurex Clearing by way of full title transfer. Because all cash transactions are transferred into a single account at Eurex Clearing, segregation is achieved on the clearing house level using the record-keeping of Eurex Clearing.

4 Segregation models

C7 collateral management services facilitate handling of collateral provided under different segregation models. The following gives a short overview of the segregation models currently supported by Eurex Clearing. All models below are supported by the same collateral pool concept.

- Omnibus segregation
- Individually Segregated Accounts
- LSOC segregation

For additional information regarding segregation models, please refer also to the Eurex Clearing homepage:

<http://www.eurex.com/clearing-en/risk-management>

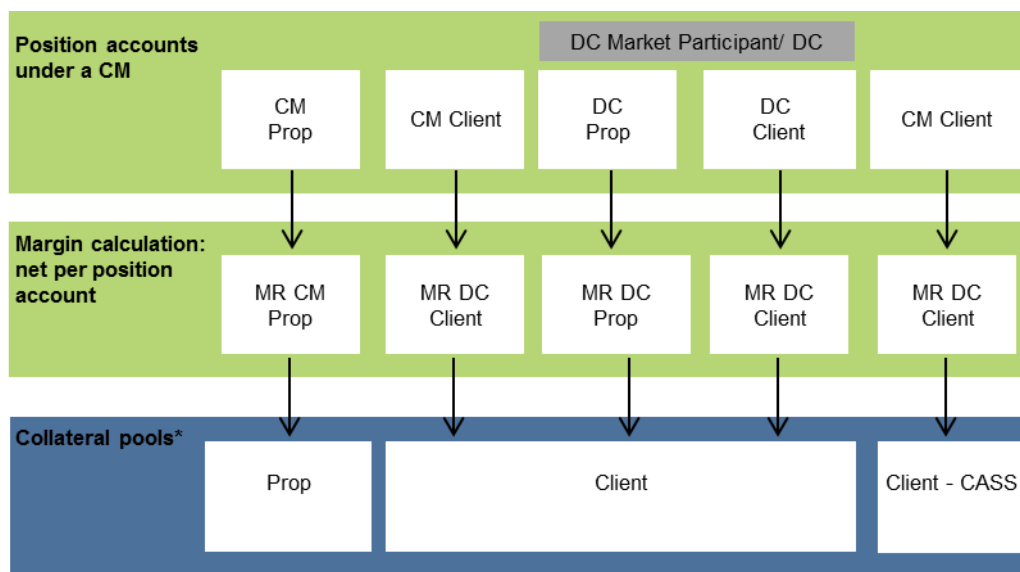
https://www.eurex.com/resource/blob/32876/82ebe58f0386c4f6e25bb70993eab9fb/data/brochure_cap.pdf

4.1 Omnibus Segregated Account (OSA)

The omnibus segregation model allows Clearing Members (CMs) to segregate client positions and collateral (for multiple clients) from the Clearing Member's proprietary positions and collateral.

Eurex Clearing's omnibus segregation models are highly flexible and aim to address the requirements of our members and their clients. The benefits for clients of omnibus segregation include:

- porting
- return of collateral (return segregated from the CM's proprietary business) and
- compliance with EMIR requirements.



* This is a sample arrangement for collateral pools. For further details, please contact your Key Account Manager.

Within the omnibus segregation arrangements, position segregation for clients can be supported.

- The Elementary Clearing Model (ECM) is an omnibus client segregation model. It provides for the segregation of proprietary positions and assets of a Clearing Member from its client-related positions and assets.
- Our omnibus offering provides Clearing Members with three options for the segregation of their clients' positions and assets.

Position segregation:

The position account structure within the ECM supports the segregation of positions of undisclosed direct customers (net omnibus segregated account - NOSA) and disclosed direct clients (DC) (gross omnibus segregated account - GOSA) from the positions of their (indirect) clients. The accounts maintained in relation to indirect clients are as well offered as NOSA or GOSA and are linked to the relevant position account of the direct client.

Asset segregation:

Elementary Clearing Model Asset Based Allocation (ECM by asset)

The setup segregates proprietary and client transactions into different Transaction Accounts which are linked to at least two different collateral pools. This means, assets are provided by the Clearing Member to Eurex Clearing separately for a) own transactions of the Clearing Member and for b) client-related transactions of the Clearing Member. Securities holdings have to be separated in two different CSD accounts.

Elementary Clearing Model – CASS Transactions (ECM – CASS)

This setup is operationally and functionally the same as ECM by asset. Transactions designated as CASS Eligible Transactions are legally segregated from non-CASS Transactions and Eurex Clearing signs trust acknowledgement letters provided by Clearing Members in order to enable them to comply with their obligations under the CASS rules of the United Kingdom Financial Conduct Authority (FCA).

General remarks:

- DC Own Accounts qualify as GOSA.
- For GOSA a separate position account can be set up under the Clearing Member's member ID for the clearing of Eurex Transactions and OTC Derivatives Transactions reflecting the position of that specific client. Therefore the margin requirement is calculated on a gross basis.
- As each NOSA reflects positions of multiple clients, the margin requirement calculation is performed on a net basis.
- Collateral in an omnibus structure will always be shared across multiple clients and leads to fellow customer risk.
- Collateral management options ensure the model is operationally simple to manage at the CCP.

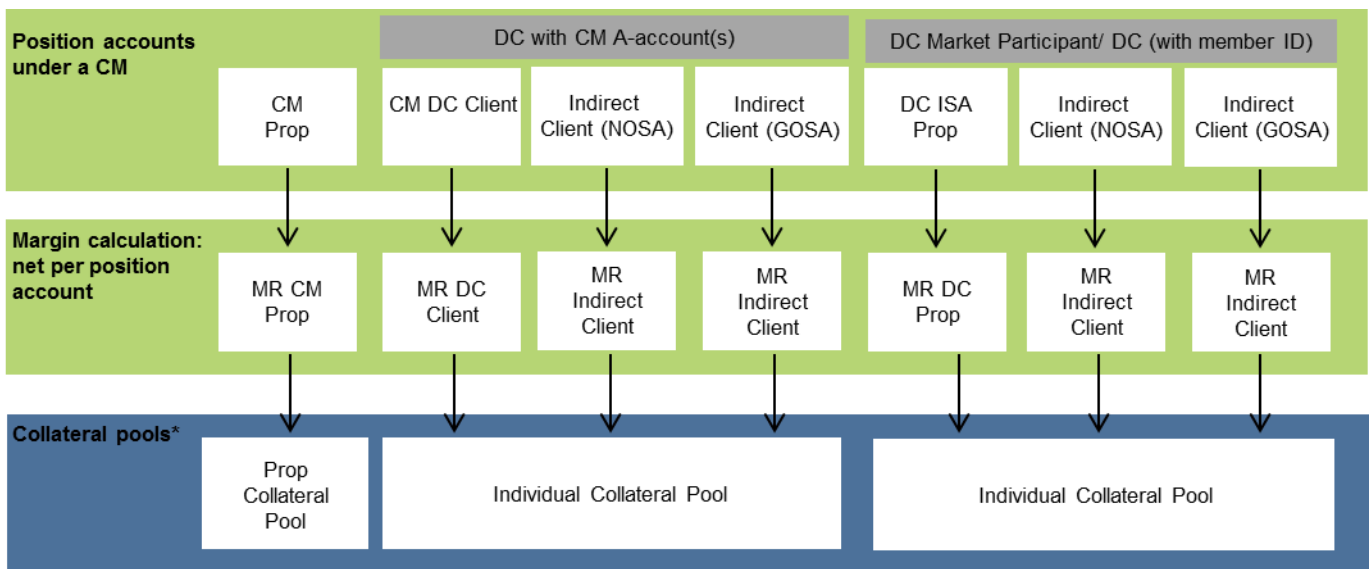
4.2 Individually Segregated Accounts (ISA)

The ISA model offers full physical segregation of a disclosed direct client's positions and collateral. With this model, the collateral assets of the client are segregated in a dedicated collateral pool and not comingled with any collateral from either the Clearing Member or its other clients.

4.2.1 Individual Segregated Account (ISA) for DCs

The model provides individual segregation without any contractual obligations of the client towards Eurex Clearing.

- Clearing Members can opt for the individual segregation for their direct clients. For Eurex Transactions and OTC Derivatives Transactions, a separate position account can be set up under the Clearing Member's member ID for individual segregation relating to a DC. UK-based Clearing Members have the option to clear ISA Transactions in accordance with the rules of the Client Asset Sourcebook (CASS Rules) of the United Kingdom Financial Conduct Authority.
- A DC is not required to enter into a clearing agreement with its Clearing Member and Eurex Clearing when opting for ISA. Eurex Clearing treats the Clearing Member as its principal counterparty who remains responsible for all transactions cleared for the respective DC with Eurex Clearing.
- Eurex Clearing establishes and maintains accounts for the Clearing Member per each DC, on which only transactions, cash amounts and margins (i.e. cash collateral and/or securities) are held for the account of the DC including its indirect clients.
- Excess collateral of a DC is segregated at the level of the CCP.

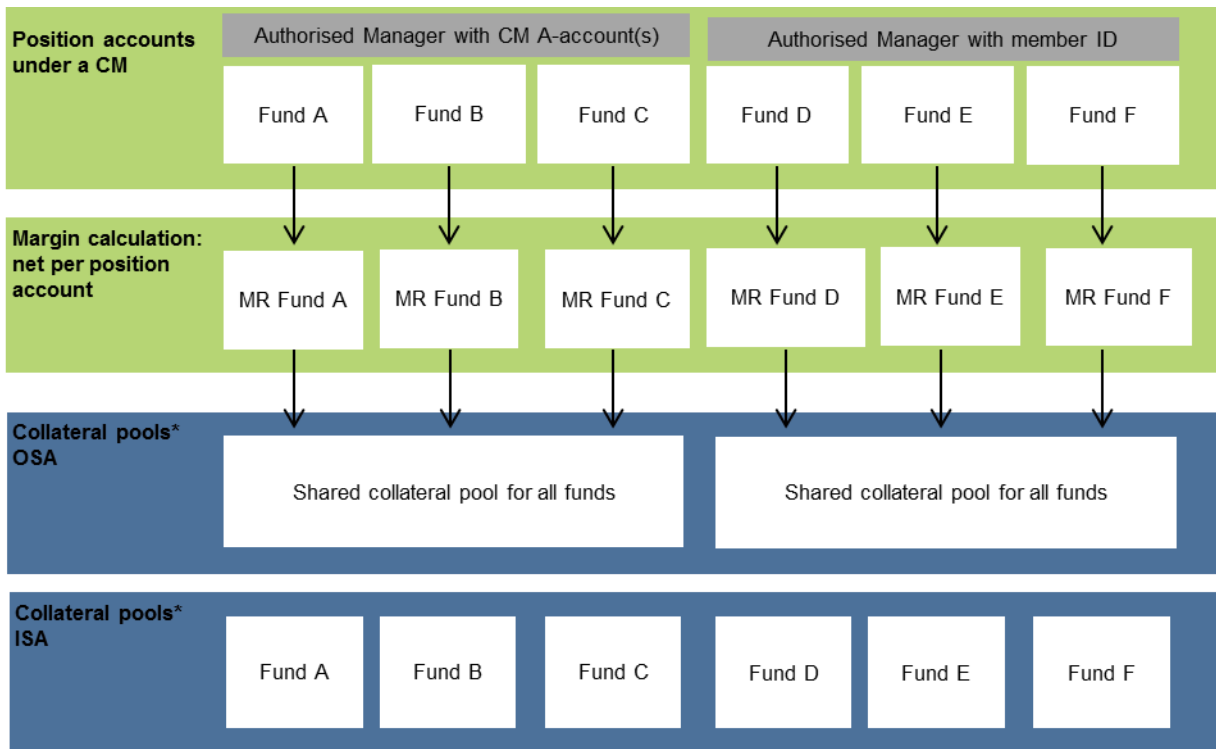


* This is a sample arrangement for collateral pools. For further details, please contact your Key Account Manager.

- Should there be a Clearing Member default, DCs can choose to port immediately to a Replacement Clearing Member.
- Alternatively, DCs can elect to close-out and directly receive their close-out proceeds and remaining collateral back.
- Collateral management options ensure the model is operationally simple to manage at the CCP.

4.2.2 Fund Manager set-up

The Authorised Manager (Fund Manager) Solution allows a fund specific position account set-up in an operational efficient manner.



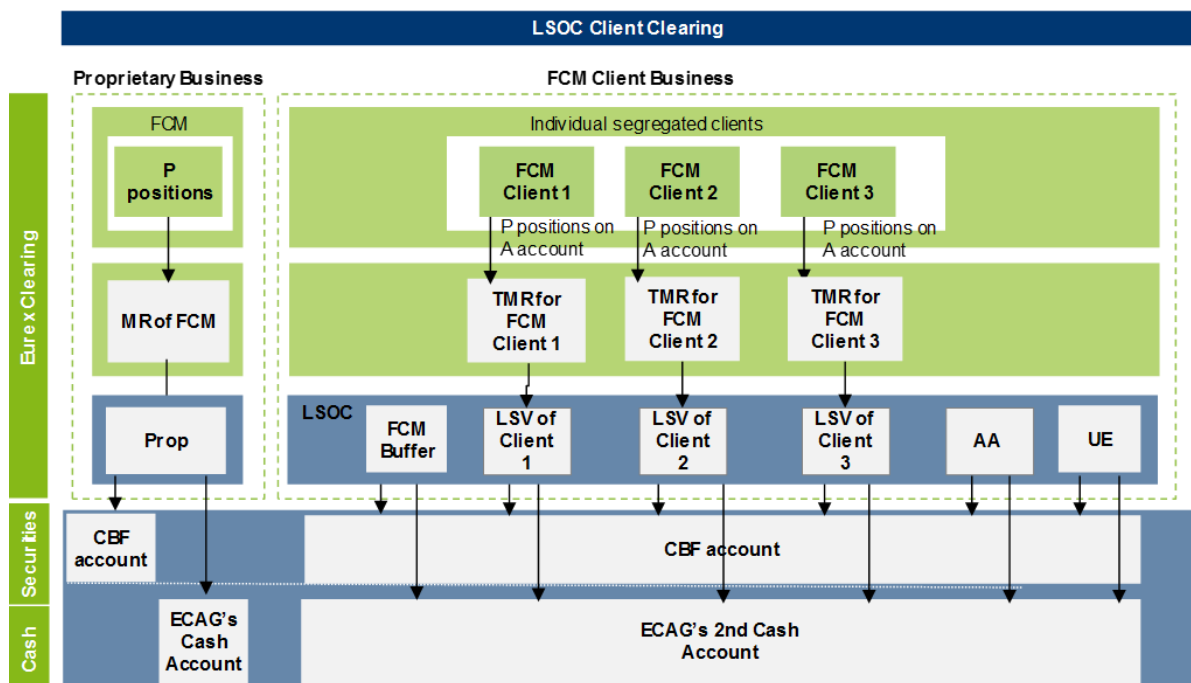
- Eurex Clearing has developed a simplified approach for funds which provides flexibility for an efficient position and collateral account setup and offers consolidated reporting for the fund manager.
- Each fund can be segregated and is disclosed to the CCP. Flexible position account and collateral pool arrangements are available.
- A fund manager can utilise A-accounts under the Clearing Member to achieve segregation/ margin efficiencies by setting up fund(s) in a single position account or setting up an account for the fund manager, if such setup complies with applicable law or regulatory requirements.
- The position setup reflects positions and margins segregated at fund level. This is available for a GOSA or an ISA client.
- Segregation is also possible as part of the existing omnibus setup of a Clearing Member (i.e. collateral pool shared with other clients).
- Reporting is consolidated on the fund manager level with a breakdown on position account/ fund level.

4.3 LSOC segregation model

Eurex Clearing offers an LSOC style (Legally Segregated Operationally Commingled) client-clearing framework in compliance with CFTC regulation Part 22 for the clearing of OTC Interest Rate Swaps.

The primary goal of the LSOC model is to protect FCM Clients from “fellow customer risk” i.e. the risk that customers of an FCM could sustain losses on other customers of that same FCM become insolvent.

LSOC is different from the traditional omnibus models because the value of collateral associated with every individual FCM client is legally segregated and protected whereas the collateral related to all FCM clients is commingled in one account.



The value of assets assigned to one FCM Client can never be utilised to meet the obligations of another FCM Client. The LSV represents the relevant value from a client asset protection point of view in terms of porting or difference claim redelivery in case of an FCM default.

Eurex Clearing supports “LSOC Without Excess” and “LSOC With Excess”. The latter requires FCMs to provide the clearinghouse with a collateral value report (CVR) in relation to its clients (FCM Clients).

In addition to the LSVs, and as depicted in figure above, an additional sub-account is established within the LSOC structure. This sub-account is the “**FCM Buffer**”. The FCM Buffer allows the FCM to post additional collateral to the omnibus collateral pool which is used to margin any FCM Client assigned to the respective pool, in particular during the intraday margining process of Eurex Clearing.

Another sub-account, “**Unallocated Excess**” (UE), is available to hold any excess that cannot be clearly assigned to any FCM Client. Funds in the UE pool cannot be used to margin, guarantee or secure any FCM Client.

UE is automatically returned to the FCM CM following the overnight margin call settlement, providing enough collateral in form of cash is available, unless explicitly requested by the FCM CM to be returned intraday. It can also be transferred to the FCM Buffer via the Clearing GUI.

Any value posted as margin collateral that is called due to a Margin Call under “LSOC With Excess” has to be assigned first to a sub-account called “**Assumed Allocation**” (**AA**). These positions represent the value that has been called to cover FCM Client’s shortfalls. After receiving next valid CVR file, the collateral has to be then booked on the LSVs, FCM Buffer or UE, respectively.

Under the “LSOC Without Excess” model, all excess collateral delivered outside of a margin call is booked to the FCM Buffer. Any such excess collateral provided under the “LSOC With Excess” model is booked to UE.

For any further information related to LSOC please refer to the website of Eurex Clearing.

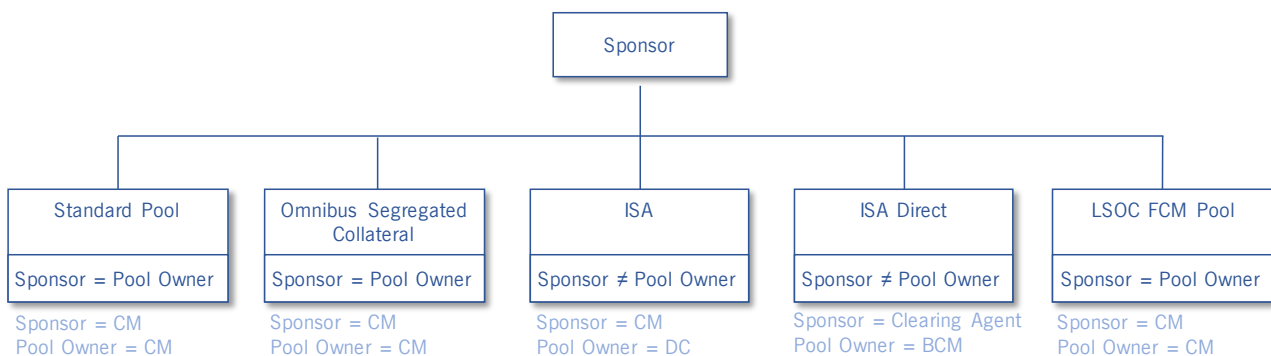
<https://www.eurex.com/ec-en/client-asset-protection-1443098>

5 Collateral management roles: pool sponsor versus pool owner

The collateral management application recognizes the following two collateral actor roles:

Pool sponsor: A pool sponsor is an entity that holds a clearing licence (GCM, DCM, CA) and performs certain functions such as fulfilment of payment obligations, risk management or delivery of securities margin collateral. The scope of sponsor's tasks is defined by the rule book of Eurex Clearing. It covers the sponsor's own collateral pool, related ISA/OSA collateral pools and/or BCM collateral pool(s).

Pool owner: This term refers to segregated clients such as ISA (DC) and BCM to emphasize their ownership of the provided collateral. A pool sponsor can also be a pool owner at the same time (e.g. for proprietary and omnibus segregated pools). If the pool sponsor is different from the pool owner, the latter might enter instructions in the C7 Clearing GUI that have to be approved by the pool sponsor (providing that both parties have agreed to such a set-up).



As depicted in the above, for the different segregation models offered, the pool sponsor and pool owner role is fulfilled by different member types:

Pool sponsor: CM, CA (a clearing agent is by definition also a clearing member)

Pool owner: DC, BCM

6 Entitlement

6.1 Overview

The entitlement mechanism used in C7 to grant members and users access to functionality also applies to collateral management services. This chapter gives an overview of the main principles of the entitlement model for C7 collateral management services and describes the set-up and configuration options.

6.2 Roles and privileges

The C7 entitlement model uses roles as a basis. The roles are assigned to a member and the member's service administrator can assign the roles to the other users.

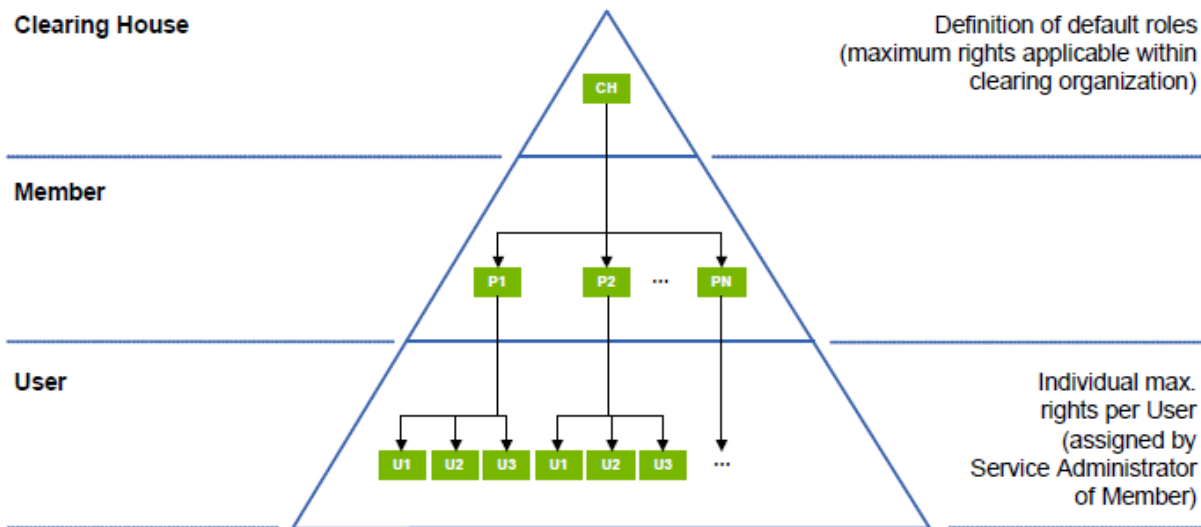
The roles themselves contain privileges. Every privilege defines access to a specific activity. For example, a member could have the privilege to "Add Cash Deposit". A request entered by a user can only be processed, if the corresponding privilege is assigned to the user/member.

The following roles are supported:

- **Collateral Manager** - This role represents the rights to perform collateral management related activities (e.g. "add cash deposit", "add security withdrawal")
- **Collateral Approval Manager** - This role represents the rights for a user of a clearing member to perform collateral management approvals related activities (e.g. "cash deposit approval", "security withdrawal approval")
- **Collateral Manager View** - This role provides the right to perform inquiries related to collateral management (e.g., "collateral position and transaction inquiry")
- **Permanent Cash Balance Manager** - This role enables the user to perform maintenance of permanent cash balance (e.g. "add permanent cash balance")
- **Service Administrator** - This role represents the necessary entitlement for administration activities (e.g. "user entitlement update")
- **Service Administrator View Only** - This role provides the right to perform inquiries related to administration activities (e.g., "user entitlement inquiry")
- **LSOC Collateral Transfer Manager** - This role enables a user to perform collateral transfers between collateral master pool and collateral sub-pools. LSOC Collateral Manager' role can be assigned to users of collateral pool sponsors. It is recommended to assign this role together with 'Collateral Manager View Only' role or with 'Collateral Manager' role.

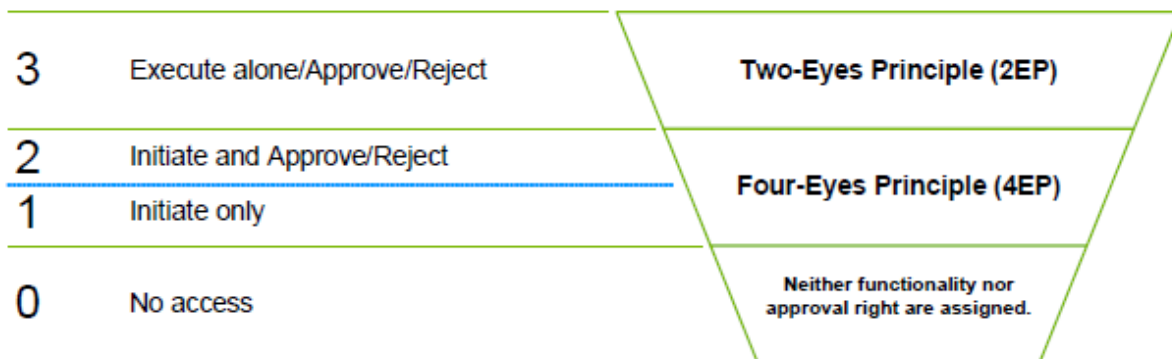
6.3 General set-up and maintenance

The C7 entitlement model follows a hierarchical approach. This approach uses a top-down logic for the allocation of access rights.



To provide a user with a right, this right must be initially assigned to the member to which the user belongs. Eurex Clearing defines the maximum entitlements of a member (e.g. based on the member type) and assigns the roles to the members accordingly. The member (service administrator) can define and maintain the entitlements for the other users. While assigning roles to users, the member can modify the settings of the privileges contained in it concerning the entitlement level.

The following four entitlement levels are available in the system:



- **Entitlement Level 3** indicates that the user is allowed to initiate a transaction alone and no second user is required for approval. The user can additionally approve or reject transactions entered by another user.
- **Entitlement Level 2** indicates that the user is allowed to initiate a transaction while requesting a four-eyes approval and approve or reject a transaction entered by another user.
- **Entitlement Level 1** indicates that the user is allowed to initiate a transaction requesting a four-eyes approval.
- **Entitlement Level 0** indicates that the user has no access to any privilege at all. This means that the user can neither initiate nor approve or reject a transaction.

As the entitlement concept follows a hierarchical approach, the entitlement of a user can never exceed the maximum entitlements of the member. Consequently, reductions in these maximum entitlements of a member are automatically applied to the entitlement settings of the affected users.

For detailed information on the entitlement mechanism, please refer to the C7 - User Entitlement Guide, available for download on the Eurex Clearing website www.eurex.com/ec-en/ under the following path:

Tech > C7 > System documentation > Overview and Functionality

6.4 Four-eyes principle processing

Entitlement levels define how a certain activity can be performed by a user and to which extent. If the four-eyes principle is required for a certain activity, a user cannot perform the action on his own, but needs a second user to approve the action. The user initiating the action for which the four-eyes principle is required needs to have at least the entitlement level 1. For the approval of any four-eyes principle request, the user requires an entitlement level of at least 2. Four-eyes principles can be applied to a range of activities as listed in the C7 User Entitlement Guide available for download on the Eurex Clearing website www.eurex.com/ec-en/ under the following path:

Tech > C7 > System documentation > Overview and Functionality

For further detail on particular four-eyes logic per functionality, please refer to the respective chapters below.

6.4.1 Four-eyes principle processing for entitlement settings

If an activity is executed that requires a four-eyes approval, it remains as a pending four-eyes principle request as long as the approval/rejection is outstanding. The Four Eyes Approval Overview C7 Clearing GUI window displays an overview of all pending four-eye principle requests for approval/rejection. This allows members to configure four-eyes approval per activity according to their individual needs.

6.4.2 Four-eyes principle processing for collateral management features

Members may optionally specify that activities related to collateral transaction entries, approvals and rejections are subject to the four-eyes principle process. Requests requiring approval by a second user are displayed on the Four Eyes Approval Overview C7 Clearing GUI window, accessible via the Four-Eyes Principle menu. The overview window shows pending requests and allows their approval or rejection. For each pending request, more information can be shown in a detail window.

7 Collateral management

From a member/user point of view, the collateral management process mainly involves the deposit and withdrawal of collateral in the form of cash, securities or claims. Deposits and withdrawals can be triggered by the clearing house (e.g. in case of a margin call) or by the member/user (e.g. in case of a collateral excess or a substitution request). The individual processes described hereafter apply generically for all usage types (margin collateral, clearing fund contributions, and company capital requirements). However, in practice, some differences/restrictions may apply (e.g. currencies allowed for one usage type might not apply for a different usage type).

Members can view their collateral positions in the C7 Clearing GUI Collateral Pool Status Overview window.

Collateral transfers instructions via the C7 Clearing GUI are valid per default for the actual business day. However, the member is able to change the value date for a cash deposit and withdrawal and for a securities withdrawal for a future business date. Such an instruction is stored in C7 Clearing system until the selected value date and will follow the ordinary processes on the value date. Any instruction can be cancelled by the member until it was delivered to the payment systems for cash or CSDs for securities.

7.1 Cash collateral

Eurex Clearing accepts cash in four currencies as cash collateral to cover intraday margin calls: EUR, CHF, USD and GBP. Overnight margin calls will only take place in the clearing member's chosen clearing currency, EUR, CHF or GBP. This is also valid for contributions to the default fund.

Product-related payments, such as variation margin, premiums etc., need to be settled in the underlying product currency.

In general, Eurex Clearing facilitates two set-ups for margin collateral in the form of cash which trigger different processes:

1. Auto-repay set to "Yes"

This set-up has the following aspects for the cash disposition

- Cash collateral in a non-clearing currency of the pool is substituted with the clearing currency of the pool if it is necessary to cover the initial margin requirement
- Excess cash collateral in the clearing currency of the pool is paid back to the sponsor in the end of day process
- Shortfalls of collateral are covered by the clearing currency in the end of day process

2. Auto-repay set to "No"

This set-up has the following aspects for the cash disposition

- Cash collateral remains in the collateral pool apart from cash collateral in non-clearing currency such as USD which is substituted in the end of day process to cover the margin requirement, if necessary.
- Non-clearing currency USD provided as a Permanent Cash Holding (see chapter 7.1.4) will remain in the collateral pool.
- Excess cash collateral remains in the collateral pool apart from cash collateral in non-clearing currency such as USD (see above)
- Shortfalls of collateral are covered by the clearing currency in the end of day process

The sponsor is able to choose the set-up per collateral pool. Per default, Eurex Clearing sets up omnibus collateral pools with "Auto-repay Yes" and individual segregated collateral pool with "Auto-repay No".

For further information regarding cash collateral such as cut-off times or admitted settlement banks, please refer also to the Eurex Clearing homepage:

<https://www.eurex.com/ec-en/services/collateral-management/securities-collateral>

7.1.1 Cash deposits

Cash collateral deposits can be initiated via the C7 Clearing GUI Collateral Transaction Input window by pool sponsors or owners. In the case of ISA and ISA Direct collateral pools, the owner is different from the sponsor of the collateral pool. Therefore, the sponsor's approval is required. If an owner creates a deposit in the C7 Clearing GUI, it then remains in a pending status until the sponsor approves or rejects the transaction. If four-eyes principle approval is required, then the pending transaction can also be viewed in the C7 Clearing GUI Four Eyes Approval Overview C7 Clearing GUI window.

A member's cash deposit request in the C7 Clearing GUI triggers a debit from his cash account and a credit to Eurex Clearing's account. Upon receipt of cash collateral on Eurex Clearing's account, the collateral balance for the respective collateral pool is updated.

Members can view their cash deposit transactions in the C7 Clearing GUI Collateral Transaction Overview window.

The input amount for cash deposits is limited as followed:

Cash amount	Currency	2EP available	4EP available
<= 250.000.000,00	CHF, EUR, GBP, USD	Yes	Yes
> 250.000.000,00 and <= 500.000.000,00	CHF, EUR, GBP, USD	N/A	Yes
> 500.000.000,00	CHF, EUR, GBP, USD	N/A	N/A

By entering an amount larger than 250.000.000,00 the system will inform the entering user that the instruction needs 4EP approval. This information should prevent the user to enter an instruction without having a second user available to confirm the instruction.

In case the proposed deposit amount is larger than 500.000.000 multiple smaller deposits need to be entered by the Clearing Member user.

These limits are valid for all Clearing Member and all collateral pools.

There are no limits for the number of instructions entered by a single user or on Clearing Member level on a business day.

7.1.2 Cash withdrawals

Cash collateral withdrawals can be initiated via the C7 Clearing GUI Collateral Transaction Input window by pool sponsors or owners. In the case of ISA and ISA Direct collateral pools, the owner is different from the sponsor of the collateral pool. Therefore, the sponsor's approval is required. If an owner creates a withdrawal in the C7 Clearing GUI, it then remains in a pending status until the sponsor approves or rejects the transaction. If four-eyes principle approval is required, then the pending transaction can also be viewed via the C7 Clearing GUI Four Eye Approval Overview C7 Clearing GUI window.

For cash withdrawals, the approval of the clearing house is always required as the member's collateral must be sufficient to cover margin requirements at all times. Upon a member's withdrawal request in the C7 Clearing GUI, Eurex Clearing checks that the withdrawal would not result in a shortfall. If this is the case, Eurex Clearing will release the requested cash withdrawal and update collateral balances accordingly. Eurex Clearing instructs a cash payment to the member's cash account.

Members can view of their cash withdrawal transactions in the C7 Clearing GUI Collateral Transaction Overview window.

7.1.3 Permanent Cash Balance for EUR, CHF and GBP

Members have the option to set a Permanent Cash Balance (PCB) per pool. The PCB is the pre-defined cash amount that a member wants to hold with Eurex Clearing. Activation of the PCB might lead to automated cash movements in the morning:

- mandatory cash call if the cash balance in the respective collateral pool and currency falls below the predefined PCB - regardless of collateralization level
- auto-return of excess cash above the predefined PCB in the respective collateral pool in the clearing currency - only if no under-collateralization exists and auto-repay is set up to “Yes” (see chapter 7.1)

The PCB functionality is available for EUR, CHF and GBP and for all margin collateral pools. This is possible only for PCB allowed currencies and where the member has the corresponding infrastructure for the currency. Members can view their PCBs in the C7 Clearing GUI Permanent Cash Balance Inquiry and Maintenance window.

7.1.4 Permanent Cash Holding for USD

Members have the option to use Permanent Cash Holding functionality to keep with Eurex Clearing pre-defined USD balances in the chosen collateral pool overnight. Permanent Cash Holding can be instructed via the C7 Clearing GUI Collateral Transaction Input window with type of money “term”.

The deposit and withdrawal instructions can be entered by pool sponsors or owners. The precondition is to have the corresponding infrastructure for USD. Members can view their USD Permanent Cash Holding in the C7 Clearing GUI Collateral Position Details window.

Note, there is a minimum holding period of 1 day for the Permanent Cash Holding in USD and the deposit and withdrawal requests have to be completed by 09:00am CET on T-1.

7.1.5 Excess Collateral Pool

Members can use one or multiple excess collateral pool(s) to minimise the number of intraday margin calls for their ISA collateral pools and segregated omnibus collateral pools. Excess collateral pool will be set up per CM upon request as it is an optional service.

Excess collateral pool will consist of cash collateral provided and owned by the CM and it can be linked to any collateral pool(s) as required.

Eurex Clearing calculates the collateralization of any collateral pool based on margin requirements and provided collateral every ten minutes during the Eurex Clearing online hours.

If there is a collateral shortfall on any segregated pool, and such a pool has been linked to excess collateral pool, required cash collateral will be automatically transferred from the excess collateral pool to the specific collateral pool to avoid intraday margin calls.

These transactions will be booked with type of money “E” (excess) and create an additional cash position in the margin pools with type of money “E”. The cash transaction type “330” Excess Cash Deposit and “332” Excess Cash Withdrawal reflect the transfers. These values are incorporated in the relevant reports: CD230, CD231, CI720 and CI731.

The new pool type will be displayed in the C7 CMS GUI Collateral Pool Overview window. In addition, new pool usage types of the excess collateral pool, i.e. intraday (I) and overnight (O) have been introduced to ensure smooth processing and visibility of transactions in the reports.

Eurex Clearing re-transfers excess cash collateral from selected segregated collateral pools to the excess collateral pool

- intraday if the collateral pool is overcollateralized by deposit of any other collateral or due to reduced margin requirements;
- before the end of day process to the overnight excess collateral pool until the shortfalling collateral pool is balanced with the end of day margin call. Once the margin call is fulfilled, the cash amount will be re-transferred to the intraday excess collateral pool;
- shortfalling collateral pools will be balanced with the end of day margin call as per regular processing.

The utilization of the excess collateral pool will be visible in the relevant reports.

Allowed Pool Currency for excess collateral pool intraday and overnight is EUR initially.

For further information regarding set-up, mechanics, reporting, etc. related to excess collateral pool please contact your Key Account Manager.

7.1.6 ~~Intraday cash margin call for Basic Clearing Members via Optional~~ additional cash account ~~for intraday margin calls for Basic Clearing Members~~

~~As an option~~ Optionally, the Clearing Agent (CA) and ~~the~~ Basic Clearing Member (BCM) can request to set up an additional external cash account for fulfillment of the intraday ~~cash~~ margin calls related to BCM's exposure only. ~~Therefore, This set-up means that all the~~ intraday ~~cash~~ margin calls will not be issued per default ~~against versus~~ the CA's external cash account (current set-up) but ~~against versus~~ the designated additional cash account (that might be part of BCM's own cash infrastructure).

Note this functionality is for intraday margin calls only.

~~Such~~ The cash amounts delivered due to any such intraday ~~cash~~ margin call will be booked and reflected in the respective collateral pool with cash position type of money "I".

~~As a part of the~~ End of Day ~~process~~ the cash position with the type of money "I" will be 1) substituted as part of by the regular End of Day margin call process and 2) released on the next business day and credited to the relevant additional cash account.

For further information regarding set-up, mechanics, reporting, etc. related to ~~excess collateral pool~~ additional cash account functionality please contact your Key Account Manager.

7.2 Securities collateral

Eurex Clearing accepts a wide range of ISINs as security collateral. Members can choose to open securities accounts either at Clearstream Banking Frankfurt (CBF), Clearstream Banking Luxembourg (CBL) or SIX SIS.

For further information regarding security collateral such as eligibility, cut-off times or delivery mechanisms, please refer also to the Eurex Clearing homepage:

<https://www.eurex.com/ec-en/services/collateral-management/securities-collateral>

7.2.1 Security deposit

Security collateral deposits cannot be made via the C7 Clearing GUI Collateral Transaction Input window. Security deposits must be made through the corresponding collateral location ((I)CSD). The deposits will then be processed via communication between the (I)CSD and Eurex Clearing. After deposits have been received, Eurex Clearing will update collateral balances accordingly. If a deposit is not eligible, Eurex instructs its return.

Members can view their security deposit transactions in the C7 Clearing GUI Collateral Transaction Overview window.

7.2.2 Security withdrawal

Security collateral withdrawals can be initiated via the C7 Clearing GUI Collateral Transaction Input window by pool owners or pool sponsors. In the case of ISA and ISA direct collateral pools, the owner is different from the sponsor of the collateral pool. Therefore, the sponsor's approval is required. If an owner creates a withdrawal in the C7 Clearing GUI, it then remains in a pending status until the sponsor approves or rejects the transaction. If four-eyes principle approval is required, then the pending transaction can also be viewed via the C7 Clearing GUI Four Eye Approval Overview window.

For security withdrawals, the approval of the clearing house is always required as the member's collateral must be sufficient to cover margin requirements at all times. Upon a member's withdrawal request in the C7 Clearing GUI, Eurex Clearing checks that the withdrawal would not result in a shortfall. If this is the case, Eurex Clearing will release the requested security withdrawal, initiate the return of the security collateral to the member's redelivery account at the (I)CSD and update collateral balances accordingly. If a withdrawal request would lead to an under-collateralization in the collateral pool, the transfer of the requested securities is postponed until the appropriate amount of collateral is in the pool to fully cover the margin requirements. If the transaction is flagged for next day settlement, the under-collateralization will be covered by an overnight margin call and the collateral returned the next morning.

Members can view their security withdrawal transactions in the C7 Clearing GUI Collateral Transaction Overview window.

7.3 Claims

Members using Clearstream Banking's triparty collateral management systems Xemac (CBF) or CmaX (CBL) can deliver securities collateral to Eurex Clearing by entering claim amounts in Xemac or CmaX. Xemac/CmaX automatically allocates securities collateral according to pre-defined eligibility criteria. Xemac/CmaX also offer daily mark-to-market securities evaluation and automatic substitution of allocated securities (e.g. securities subject to corporate action events).

Claims can only be assigned to one collateral pool and currency. However, a pool can have multiple claims assigned to it.

7.3.1 Claim increase

Claim increases cannot be made via the C7 Clearing GUI Collateral Transaction Input window. Claim increases must be made directly in Xemac or CmaX. The claim increases will then be processed automatically via communication between the Xemac/CmaX and Eurex Clearing. After a claim increase has been received at Eurex Clearing, collateral balances will be updated accordingly.

Members can view their claim increase transactions in the C7 Clearing GUI Collateral Transaction Overview window.

7.3.2 Claim decrease

Claim decreases cannot be made via the C7 Clearing GUI Collateral Transaction Input window. Claim decreases must be made directly in Xemac or CmaX. The pool sponsor or owner can perform the claim decrease. In the case of ISA and ISA direct collateral pools, the owner is different from the sponsor of the collateral pool. Therefore, the sponsor's approval is required. If an owner inputs a claim decrease, it then remains in a pending status until the sponsor approves or rejects the transaction. If four-eyes principle approval is required, then the pending transaction can also be viewed via the C7 Clearing GUI Four Eye Approval Overview window.

For claim decreases, the approval of the clearing house is always required as the member's collateral must be sufficient to cover margin requirements at all times. Upon a member's decrease request via Xemac or Cmax, Eurex Clearing checks that the decrease would not result in a shortfall. If this is the case, Eurex Clearing will approve the requested claim decrease and update collateral balances accordingly.

In Xemac, forced claim decreases may occur when the value of the allocated securities no longer covers the claim amount and the member has insufficient or no additional securities available for allocation. For example, this can occur due to lower securities values because of prices changes or when securities become ineligible as they near maturity. In case of forced claim reductions, no further approvals are necessary and they are processed STP.

Members can view their claim decrease transactions in the C7 Clearing GUI Collateral Transaction Overview window.

8 Multiple transaction processing: Bulk upload

In cases where members need to make multiple deposits and withdrawals across numerous collateral pools, the C7 Clearing GUI for collateral management services offers a bulk upload functionality. Members can upload cash deposit and withdrawal as well as securities withdrawal instructions via csv file to the C7 Clearing GUI. These are then processed as individual transactions in the same way as if they had been inputted individually. Successfully uploaded transactions can be viewed in the Collateral Transaction Overview window.

Please note that the corresponding cut-off times for cash and securities deliveries/withdrawals also apply for this application and the future value date functionality as available as well.

The bulk upload can be initiated in the C7 Clearing GUI Transaction Input window.

9 Collateral evaluation / Excess and shortfall

In general, collateral is evaluated every 10 minutes throughout the day. At the time of evaluation, the most current available prices, risk parameters and exchange rates are used. Additionally, changes in collateral positions due to deposits and withdrawals or changes in the corresponding margin requirement also trigger a new evaluation of collateral. These reevaluations are then reflected in the collateral balance which can be viewed in diverse C7 Clearing GUI collateral management related windows.

Collateral pools can have margin requirements and collateral in various currencies. If there is a margin requirement and collateral in the same currency, these will be offset against each other to the extent possible. This avoids the use of an FX haircut. Thereafter, any remaining margin requirements and collateral are converted into the clearing currency using the corresponding FX haircut.

Changes in the collateral value and/or margin requirements can lead to an excess or a shortfall in the collateral pool. Excess securities collateral and claims are always released when explicitly requested by the sponsor/owner regardless of the segregation model. For the procedure concerning excess cash collateral, please refer to 7.1.

Margin shortfalls result in a margin call against each collateral pool either early in the morning based on overnight valuations or also intraday. In general, margin calls are made against the individual collateral pool and must be met by the pool sponsor. Margin surpluses in any collateral pool cannot be used to cover a shortfall of the non-segregated (proprietary) collateral pool or any other segregated collateral pool. End of day margin calls are made in the clearing currency of the corresponding collateral pool. Intraday margin calls can be made in the clearing currency or USD depending upon the individual currency cut-off times.

10 Inquiries

The C7 Clearing GUI for collateral management services provides members/users possibilities to make inquiries regarding collateral management functionalities (e.g. transaction or positions overview/details). These are available within the various C7 Clearing GUI windows for collateral management services.

For detailed information on the C7 Clearing GUI, please refer to the C7 Clearing GUI - User Manual, which will be available for download Eurex Clearing website www.eurex.com/ec-en/ under the following path:

Tech > C7 > System documentation > Eurex Clearing GUIs