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Triparty Collateral Management Service (CmaX)

Product Guide

November 2026

Triparty Collateral Management Service (CmaX) Product Guide

November 2026

Document number: 6390

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Foreword

Clearstream Banking launched the world's first multi–currency Triparty Repo Service in September 1992 and has continued to launch innovative collateral management products and services to address the financing and secured investment needs of international traders and investors.

The range of clients using these services continues to grow and includes central and sovereign banks, securities lenders and borrowers, custodians, commercial banks, international broker-dealers and assets managers.

Clearstream Banking's knowledge, experience and innovation is increasingly sought by major domestic institutions throughout the world either to guide them in the development of similar products to serve their local markets or to enter into a partnership to enhance the mobilisation of collateral.

This Product Guide contains information organised in the following chapters:

- 1. Overview on page 1-1;
- 2. Products and services on page 2-5;
- 3. Links to electronic trading platforms on page 3-23
- 4. Getting started on page 4-27;
- 5. Transaction life cycle on page 5-45;
- 6. Collateral reuse on page 6-57;
- 7. Fully Automated Collateral Transfer (FACT) to an External Depository on page 7-61;
- 8. Collateral eligibility, price selection process, valuation and ratings on page 8-65;
- 9. Custody events and corporate actions on page 9-77;
- 10. Connectivity and client reporting on page 10-83;
- 11. Event of Default on page 11-87;
- 12. Billing on page 12-89.

A Glossary of terms is included at the end of this Guide.

Client services

The daily administration and operational aspects of Clearstream Banking's Collateral Management Services are handled by a dedicated Collateral Management Services team in Luxembourg.

Assistance is directly available from the **Collateral Management Desk**, as follows:

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Swift address:	CEDELULL

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1. Overview

Clearstream Banking launched the Collateral management eXchange (CmaX) system in October 2006. The CmaX application centralises all collateral management services, from straightforward repos to tailored reuse structures, on a single platform. 2009 witnessed an expansion into new asset classes, with the launch of our equities service, which, in 2010, was developed into a fully customised service at par with our fixed income capability.

Over the last years, Clearstream Banking has entered into partnerships with market infrastructures to enhance the mobilisation of collateral. This has enabled CmaX to source assets held at other locations together with assets held at Clearstream to be used as collateral within Clearstream's triparty collateral management services. Partnerships have been made with providers of local custodian services as well as with Clearstream Europe AG (CEU). The latter has resulted in the migration of all Collateral Management services from the CEU Xemac platform to CmaX. This single collateral management service provides harmonised processes as well as interoperability between the services offered by Clearstream Banking Luxembourg (CBL) and CEU.

Collateral management umbrella

Clearstream Banking offers a complete range of services under its collateral management umbrella:

- **Triparty Repo Service (TRS)**

  For the settlement, collateralisation and maintenance of multicurrency repo transactions.

  Cash settlement and collateral management is based on delivery against payment (DVP) settlement.

- **Triparty Securities Lending Services (TSLS)**

  For the collateralisation and settlement of securities lending transactions.

  – TSLS1 - loan settlement, valuation and collateral management;

  – TSLS2 - loan valuation and collateral management.

- **Triparty Collateral Management Services (TCMS)**

  For the collateralisation of various exposures, such as bilateral cash loans, CSA, CSD and Central Counterparty (CCP) margining, central bank discount borrowing, securities lending transactions and management of initial margin exchange for uncleared derivatives etc.

- **General Collateral (GC) Services**

  For the management of electronic repo transactions, combining the CCP services of Eurex Clearing (GC Pooling) with Clearstream Banking's collateral services.

- **Pledge to Central Banks**

  For collateral pledges in favour of central banks, to gain access to intraday or overnight liquidity, participate in tender operations, for risk management purposes etc.

- **CCP margining**

  For the collateralisation of member margin obligations with central counterparties.

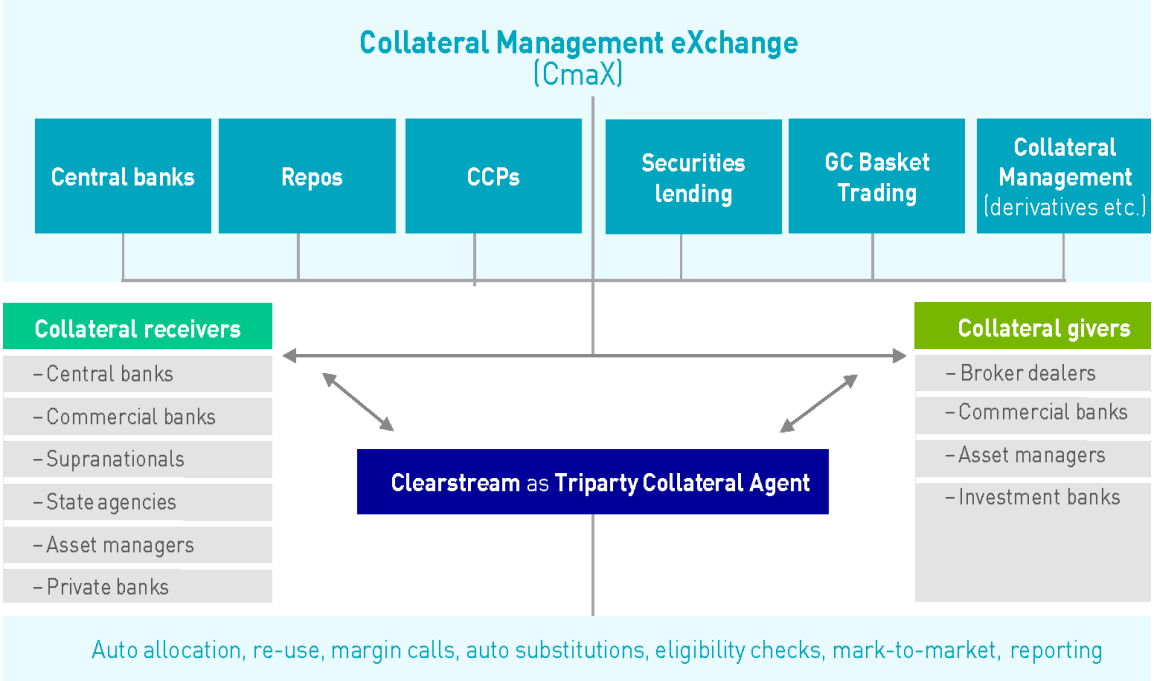


Figure 1-1. Overview of CmaX

Benefits and features of CmaX

Clearstream's triparty collateral management services simplify the administration of various multi–currency agreements for both Collateral Receivers and Collateral Givers. These services aim to reduce the operational risks associated with such transactions by offering true delivery against payment or free of payment settlement and securities safekeeping and monitoring services.

Core features	Added-value services
– True delivery against payment (TRS, TSLS1 and GC Pooling) and free of payment settlement (T2LS2, TCMS, pledge to central banks and GC services other than GC Pooling)	– Proactive counterparty introduction service, whereby carefully selected counterparties are introduced to one another
– Use of sophisticated Auto-Assign (AA) Facility, which automatically selects and allocates securities to triparty transactions	– A "state-of-the-art" Collateral Reuse service, enabling Collateral Givers to reuse securities received in triparty transactions
– Unlimited substitution facilities (DVP)	– Flexible, client-defined eligibility profiles, concentration limits and margins
– Pre-record date substitutions of taxable securities for AA clients	– A wide range of communication options, including Swift, secure email, Xact Web Portal and Xact File Transfer
– Daily mark-to-market and detailed daily valuation reports by transaction and by net exposure	– Flexible cash management options
– Proactive margin calls for clients that have subscribed to the AA facility	– A multi-asset class capability

Figure 1-2. CmaX core features and added value services

Role of Clearstream Banking

Clearstream Banking acts as Collateral Agent, fulfilling a facilitating role:

- Undertaking administrative functions, thus reducing cost and workload for clients;
- Providing a fully documented and neutral service;
- Ensuring reduced risk through independent agency services;
- Providing a secure environment.

2. Products and services

CoBM Triparty Repo Service (TRS)

The CoBM Triparty Repo Service offered by CBL is designed to simplify the process of administering multicurrency repurchase agreements for both Collateral Receivers and Collateral Givers. Furthermore, operational risks are reduced through an effective delivery against payment settlement process and a comprehensive securities safekeeping service.

Collateral received in connection with a triparty repo exposure is monitored and marked-to-market on a daily basis to ensure that collateral margin requirements are maintained.

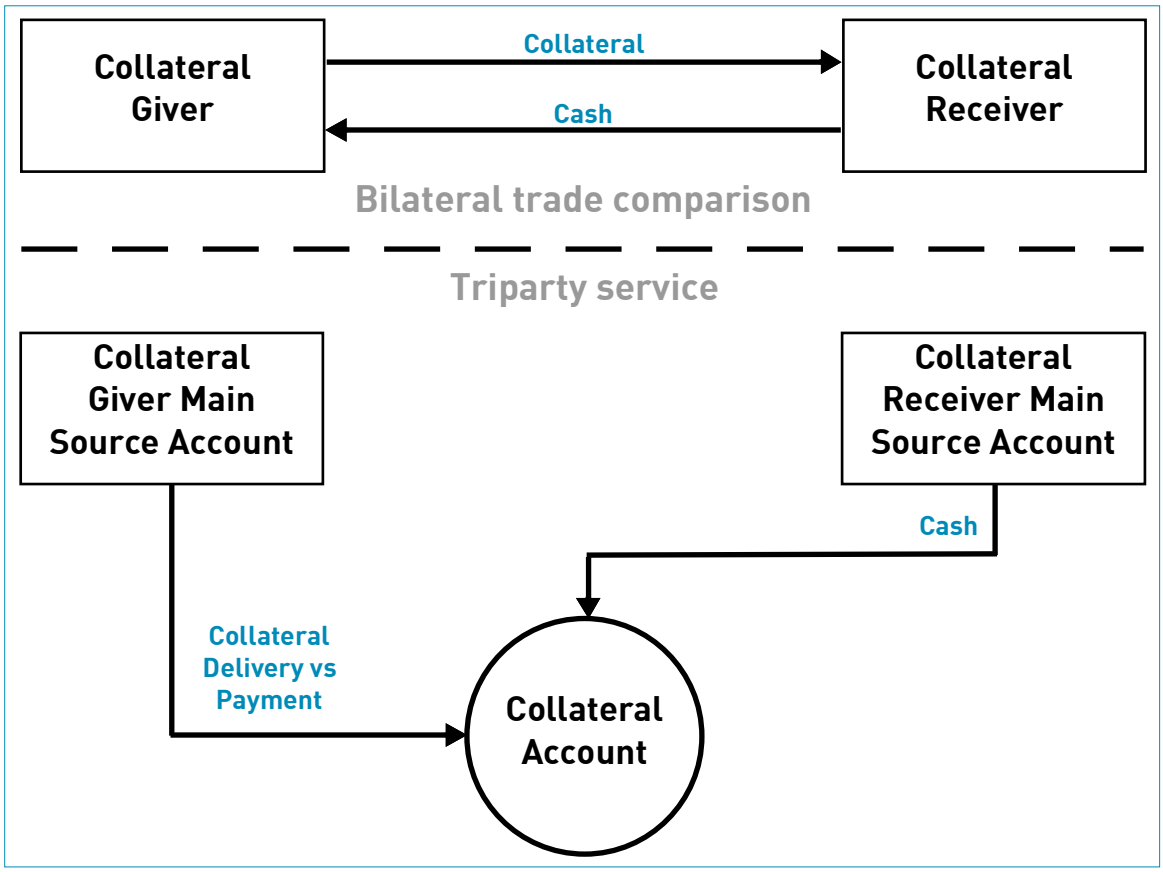


Figure 2-1. Triparty Repo Service (TRS)

When the trade notifications have been validated and matched, the collateral eligibility check is performed. Based on this eligibility check, CBL generates delivery against payment instructions to transfer the collateral against its cash countervalue from the Collateral Giver's account to the collateral account in favour of the Collateral Receiver.

The CoBM Triparty Repo Service supports both fixed and floating rate repo transactions.

CeBM Triparty Repo Service (TRS)

Besides the above mentioned CoBM Triparty Repo Service, CBL also offers a CeBM Triparty Repo Service. The purpose of the service is the same, but settlement occurs in CEU/T2S and all CoBM risk is therefore removed.

This service requires that both the Collateral Giver and the Collateral Receiver be participants in CEU and to have a valid T2S DCA.

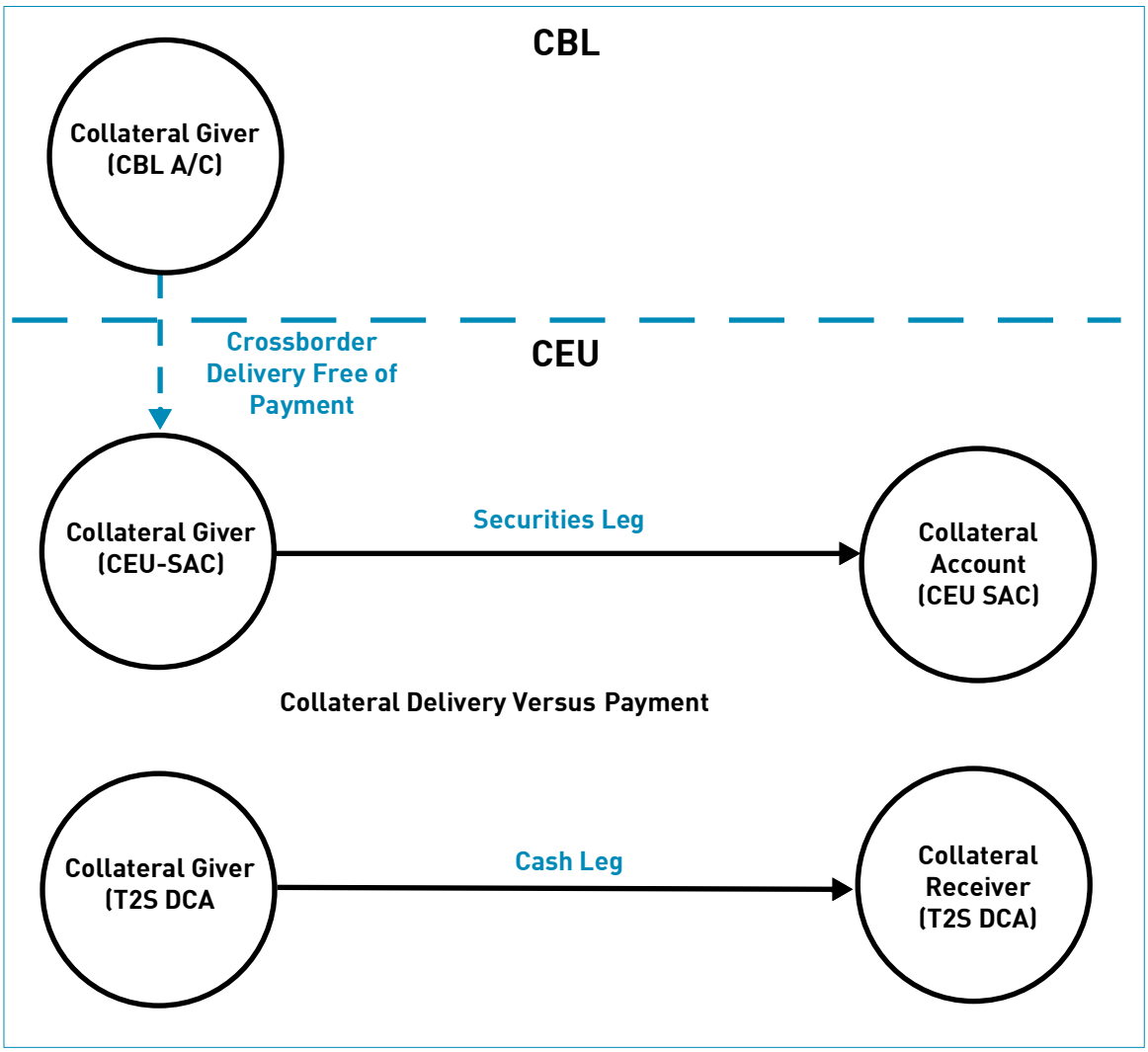


Figure 2-2. CeBM Triparty Repo Service (TRS)

Floating rate repo

Triparty trades that are priced on a floating rate basis can be pegged to one of the following money market benchmarks:

- ESTR
- SOFR
- SONIA
- OBFR
- TONAR

Repo transactions linked to overnight benchmark rates are subject to a provisional intraday interest accrual calculation based on the previous day's benchmark rate value. The provisional calculation will apply from trade opening until the reference rate is updated. CmaX will then retroactively recalculate the applicable interest amounts and adjust the collateral amount calculation accordingly.

Flexible interest payments

Counterparties to a repo trade may agree to settle interest payments at regular intervals during the life of a transaction. This should be communicated to CBL via matching notifications, along with the agreed periodicity of interest payments (daily, weekly, fortnightly, monthly, quarterly, semi-annually or annually) and/or a list of ad-hoc payment dates. The interest payment schedule can subsequently be updated as required during the trade life cycle.

For information on the cash management process for Collateral Receivers, please refer to "Cash management options for Collateral Receivers" on page 4–34.

Intraday Triparty Repo (TRS)

Intraday Triparty Repo supports settlement in CoBM as well as CeBM (see above sections) to cover short term liquidity needs, opening and closing same day.

To trigger the intraday flag in CmaX, both counterparties must submit a single instruction that includes the agreed opening and closing timestamps of the repo. Intraday instructions are supported via Swift MT527 and Xact Web Portal.

Multiple interest rate calculation methods are supported, including minute by minute accrual from opening to closing, as well as client defined fixed fees or custom interest rates, providing full flexibility for intraday funding needs.

Intraday Repos are billed for one day with the maximum outstanding balance for the respective day.

Triparty Securities Lending Services (TSLS)

Clearstream offers two triparty securities lending services, giving clients the choice between settling the underlying loan within CBL's triparty framework (TSLS1) or settling the loan externally (TSLS2). Collateral management and loan valuation are common to both services.

Triparty Securities Lending Service 1 (TSLS1)

TSLS1 is a comprehensive service that provides complete settlement and valuation of a securities loan as well as the related collateral management for the duration of the trade.

Simultaneous exchange of the loan principal against collateral enables settlement of both sides of the transaction, thus reducing risk and increasing efficiency.

The collateral is allocated to a special segregated account (the collateral account) and marked-to-market daily. Detailed and comprehensive reporting is sent to both counterparties.

Note: As the loan principal will be simultaneously exchanged against collateral, the loan securities must be delivered to the Collateral Receiver's main account in CBL.

The process is illustrated below:

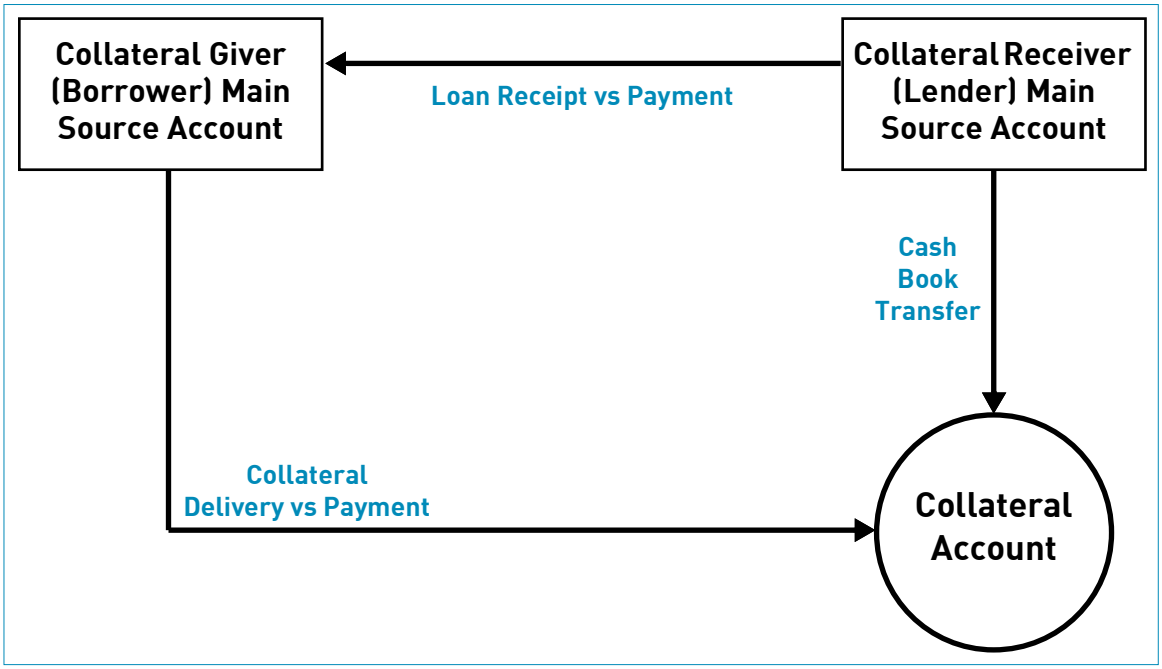


Figure 2-3. Triparty Securities Lending Service 1 (TSLS1)

1. Loan securities are transferred against a cash amount, equal to the value of the loan, from the Collateral Receiver's account to the Collateral Giver's account.
2. The collateral securities are transferred to the collateral account in favour of the Collateral Receiver against an equal amount of cash.
3. The resulting cash position is transferred from the Collateral Receiver's account to the collateral account.

Triparty Securities Lending Service 2 (TSLS2)

TSLS2 provides collateral management services and valuation, but not settlement, of loan securities to clients that want to settle the loan securities on a bilateral basis.

The details of the loan securities must be provided to CBL for valuation purposes. The collateral and the loan securities are marked to market on a daily basis and margin calls performed if required.

Collateral is delivered form the Collateral Giver's account to the collateral account in favour of the Collateral Receiver.

The same concept is applied to the Collateral Management of secured certificates (CMSI), which is collateralised via TSLS2 in CmaX. For CMSI, both exposure increases and decreases are handled unilaterally by the Collateral Giver.

Settlement of the collateral is free of payment.

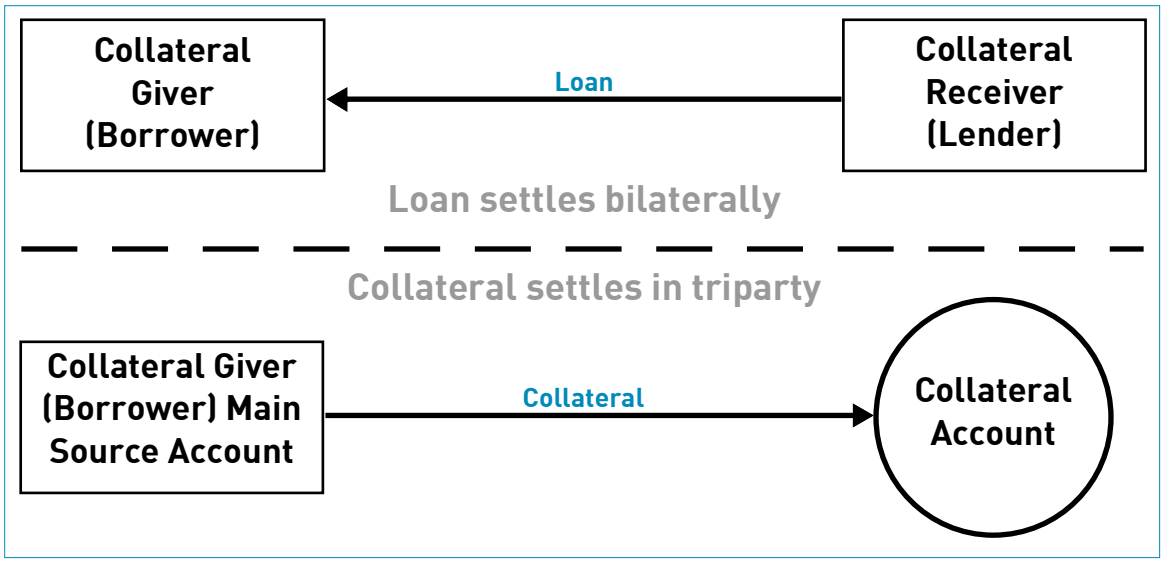


Figure 2-4. Triparty Securities Lending Service 2 (TSLS2)

Note: If the Collateral Giver and Collateral Receiver decide to settle the collateral free of payment within CBL's TSLS service, they must ensure that the loan settles in the correct sequence because the transfer of the loan and the collateral are not processed at the same time.

Triparty Collateral Management Service (TCMS)

TCMS simplifies collateral administration for both Collateral Receivers and Collateral Givers. The service can be used to cover various types of principal agreements that the counterparties may have entered into, such as:

- Bilateral cash loans;
- ISDA/CSA margining including initial margin segregation;
- Collateralisation for central bank credit and liquidity programmes;[1]
- Collateralisation for CCP member margin requirements;[2]
- Collateralisation of securities lending transactions etc.

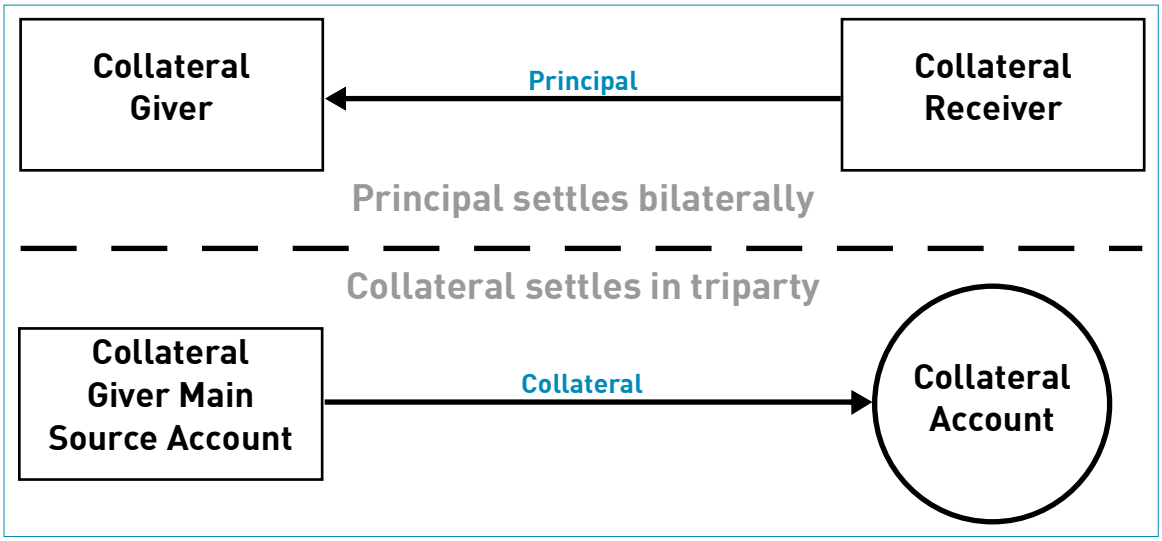


Figure 2-5. Triparty Collateral Management Service (TCMS)

Collateral is delivered from the Collateral Giver's account to the collateral account, free of payment. Clearstream performs a daily mark-to-market of the collateral securities and instructs margin calls to keep the collateral value in line with the underlying exposure. The participants must communicate, through matching notices, any change in the value of the principal.

1. The participation and setup requirements for the Deutsche Bundesbank are set out in the Guidelines for accessing Eurosystem liquidity via Deutsche Bundesbank.
2. The participation and setup requirements for the Eurex Clearing members are set out in the Guidelines for the Eurex Margining service.

General Collateral (GC) services

GC Pooling

GC Pooling combines anonymous electronic trading on the Eurex Repo platform with the Central Counterparty (CCP) service of Eurex Clearing and Clearstream's fully automated collateral management and settlement services[1]. Collateral received can be reused for further GC Pooling trades or for onward pledges to the German Central Bank or covering CCP proprietary member margin requirements[2].

Participants will be setup in both CBL and CEU systems as appropriate if required. The setup in CBL will facilitate settlement of GC Pooling in all currency / basket combinations which will settle in commercial bank money via Creation. These are all baskets traded in non-EUR currencies as well as EUR settlement in the INTMXQ basket due to the nature of the underlying securities, which are non-eligible for T2S settlement.

The setup in CEU will facilitate the trading of all GC Pooling baskets against EUR, which will settle in central bank money via the T2S DCA.

Collateral accounts will be opened in both CBL and CEU to facilitate GC Pooling trading in all basket and currency combinations the client applied for.

Participants execute a GC Pooling trade on the Eurex Repo platform, Eurex Repo then submits the trading data to Eurex Clearing, which acts as Central Counterparty (CCP). Eurex Clearing sends standard clearing reports to the participants, Eurex Repo produces a trade slip for the parties involved. Eurex Clearing then performs netting of trades and submits the resulting exposure adjustments to Clearstream. The Clearstream Collateral Management System (CmaX) collateralises the (net) exposures with one of the following standardised baskets:

- EGCP and EGCPX (comprising ECB- eligible securities)
- GCPINTMXQ
- GCP Green bond basket
- GCP Single issuer baskets (Germany, France, Italy, Spain, EU).

EGCP, EGCPX, Equity basket, Green bond basket and Single issuer baskets against EUR will settle in central bank money and all other basket and currency combinations will settle in Creation in commercial bank money (including EUR settlement for the INTMXQ basket).

1. For further information about participation and setup requirements for the service, please refer to the Guidelines for accessing GC Pooling market liquidity on the Clearstream website.
2. Excluding Single issuer baskets.

GC Pooling setup illustrated in the figure below:

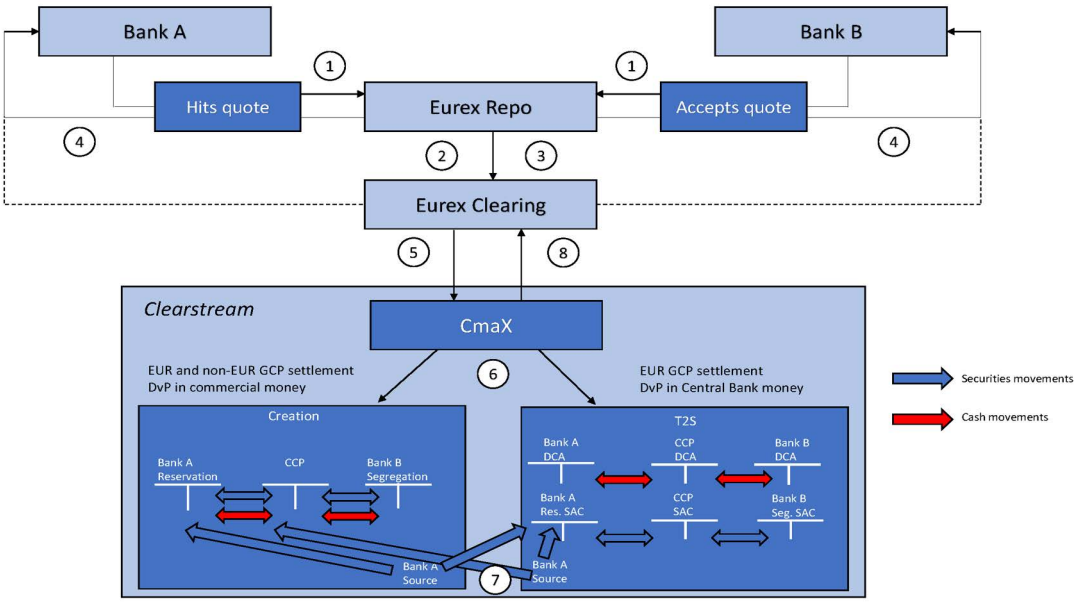


Figure 2-6. GC Pooling setup

1. Participants execute a GC Pooling trade on Eurex Repo.
2. Eurex Repo submits the trading data to Eurex Clearing, which acts as Central Counterparty (CCP).
3. Eurex Clearing sends standard clearing reports to the banks.
4. Eurex Repo produces a trade slip for the parties involved.
5. Exposure adjustments are sent to CmaX via MT527.
6. Depending on the combination of basket and settlement currency of the adjustment, settlement instructions are generated either for T2S (EUR) or Creation (EUR and non-EUR).
7. Depending on client setup, collateral givers can automatically source eligible collateral from the same platform or cross-border before the settlement.
8. Settlement of the exposure adjustment happens DvP on individual ISIN basis. Feedback on exposure adjustment is provided to Eurex Clearing.

Front legs and term legs of the repo trade are both treated as exposure adjustments (up and down) within CmaX which are sent by Eurex Clearing after netting to Clearstream. For GC Pooling repos, the repo rate is included in the exposure adjustment sent by Eurex Clearing.

No shaping will be applied to the exposure adjustments, but depending on availability of cash/collateral, adjustment can be fulfilled partially. Each individual DvP transaction on individual ISIN basis settles on an all-or-nothing basis.

For GC Pooling, a minimal nominal quantity of 5000 for fixed income securities is applied for collateral allocation. In addition, a maximum value of 200 mn per security is considered for the generation of DvP instructions. Should only one ISIN be selected to cover the exposure adjustment (for example, for Single issuer baskets), several 200 mn DvP instructions in the respective ISIN will be generated.

Clients are usually set up with a Collateral Giver (CG) and a Collateral Receiver (CR) contract and exposure versus the CCP per basket. When a net CG becomes a net CR (so-called change of direction), the CG exposure is reduced to zero and the CR exposure is increased; same happens vice versa for change into the other direction.

If the netting results only in a cash difference (for example, when the trade is fully rolled and only the repo rates differ) sent as an exposure adjustment, a cash instruction will be processed by CmaX. Reporting will be available in CmaX as well as in the Clearstream Settlement reporting.

Setup and settlement

Two dedicated collateral accounts will be opened in both CBL and CEU if clients decide to trade the relevant currency/basket combinations. Accounts in CBL will facilitate commercial bank money settlement and accounts in CEU will facilitate central bank money settlement:

- Collateral reservation account, containing assets to be allocated in GC Pooling (Collateral Giver activity);
- Collateral segregation account, containing assets received via GC Pooling (Collateral Receiver activity).

A dedicated cash account or source account will be required to settle GC Pooling transactions in commercial bank money. A T2S DCA will be required to settle cash in central bank money.

For collateral providers, a buffer of 1% will be applied to the GC Pooling contracts to cover the exposures. These will be automatically booked from the Source account to the Reservation accounts and delivered to the account of the CCP.

The securities account structure and settlement process are illustrated in the figure below:

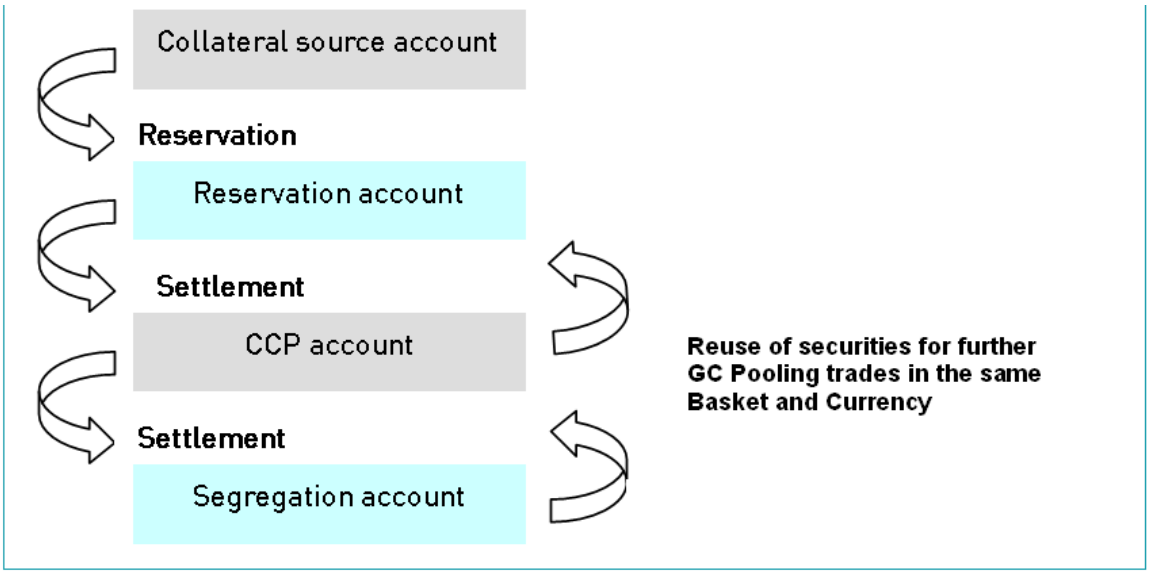


Figure 2-7. Account structure and settlement process for GC Pooling

For these GC Pooling Reservation and Segregation accounts in CmaX, new participant short codes are created for the clients that are composed of the Trading Member ID at Eurex Clearing and the suffix "CG" (Collateral Giver) or "CR" (Collateral Receiver). Conceptual examples:

ABCFRCG - For Collateral Giver role / contract

ABCFRCR- For Collateral Receiver role / contract

Business relationship setup

In order to participate in GC Pooling participants Repo market, participants need to be clients of CBL's collateral management services as CBL is the Triparty Collateral Management Agent.

In addition, participants need to be clients of CEU custody and settlement services in order to enable the settlement of trades in T2S (when respective basket/currency combination is requested). Therefore, securities accounts on CASCADE resp. T2S SACs are required.

Note: Clients can combine their assets held in the CEU settlement platform CASCADE/T2S with any assets held in Creation to form a single collateral pool by dedicating them as source accounts for the Reservation account. Alternatively, clients can centralise their holdings on one account and dedicate this as source account for several Reservation accounts (CASCADE/T2S and Creation).

Note: The collateral valuation of eligible securities conforms to the rules defined by Eurex Clearing (for example, haircuts and prices).

A separate reservation account will be required in order to trade Single issuer baskets. This is to ensure sourcing for Single issuer basket trading is clearly separated from sourcing for other GC Pooling Repo trades in other baskets.

The funding of GC Pooling trades can be done in central bank money via the T2S DCA or in commercial bank money via a Creation account.

Netting and Exposure adjustment timing

All Repo openings and closings are included in the daily netting by Eurex Clearing with the exception of OverNight Openings, which are send directly after acceptance to Clearstream for settlement. The result of the daily netting by Eurex Clearing is sent every business day around 09:30 CET to Clearstream for settlement for all basket/currency combinations, allowing sufficient time for cash and securities provisioning on the client's side:

Trading term	Type	Inclusion in ECAG end-of-day netting	Submission for settlement
OverNight	Opening	No	Daily between 07:00 and 17.00 CET
OverNight	Closing	Yes	Daily at 09:30 CET
All other trading terms	Opening	Yes	Daily at 09:30 CET
All other trading terms	Closing	Yes	Daily at 09:30 CET

As a result, results of Term trading / Term legs from OverNight trades cannot be netted with new same-day Overnight Openings. In this case, both exposure adjustments need to settle / both cash and securities liquidity need to be provisioned by the client.

GC Pooling Select Invest

GC Pooling Select Invest is a product offering for clients without access to central bank money interested in a solution as cash provider only in GC Pooling.

To the extent GC Pooling Select Invest is chosen, the following additional features to the existing GC Pooling service apply:

- Cash prefunding in commercial bank money on Creation account. Only after successful prefunding, Eurex Clearing will be notified and same-day trading on Eurex Repo enabled for the respective settlement day.
- Same-day settlement will be enabled both for EUR in central bank money as well as for settlement in Creation. For settlement in central bank money, Clearstream will perform the cash transformation into central bank money for settlement against T2S DCA accounts
- Purchased securities are fully pledged to Eurex Clearing, thereby obliterating additional margin requirements at Eurex Clearing by usage of the Specific Repo license.

Clients can act as net cash providers only; funding of cash amounts (EUR as well as non-EUR) is always in commercial bank money.

GC Pooling Select Finance

GC Pooling Select Finance is a product offering for clients who usually do not have access to Central bank money and interested in a solution to act as both a cash provider and a cash taker in GC Pooling. GC Pooling Select Finance participants of Eurex Repo must participate in the clearing process of Eurex Clearing by applying for a Basic Clearing Member license (BCM). This license qualifies for the clearing of own trades.

Hence, the Basic Clearing Member of Eurex Clearing cannot provide clearing services to third-party clients. The Basic Clearing Member has a direct contractual relationship to Eurex Clearing, that is, the member is creditor and debtor with regard to any obligations and claims arising under the clearing agreement. Nevertheless, it is required to sign a trilateral agreement with a Clearing Agent because the Clearing Agent has to provide certain mandatory services to the Basic Clearing Member:

- Provision of the Default Fund Contribution;
- Responsibility for participation in DMP (Default Management Process) in proportion of a Basic Clearing Member's cleared business.

To the extent GC Pooling Select Finance is chosen, the following additional features to the existing GC Pooling service apply:

- Cash prefunding in commercial bank money on Creation account;
- Same-day settlement will be enabled both for EUR in Central bank money as well as for settlement in Creation. For settlement in Central bank money, Clearstream will perform the cash transformation into Central bank money for settlement against T2S DCA accounts;
- Clients can act as both a net cash provider or a net cash taker; funding of cash amounts (EUR as well as non-EUR) is always in commercial bank money.

Cash Deadline impacts

All clients opting for a commercial bank money set-up for EUR GC Pooling settlement in central bank money need to be aware of the earlier CBL deadlines for EUR compared to CEU/T2S:

Cash provisioned after the CBL EUR deadline or cash received in central bank money after the deadline will only be processed with next day value in Creation

Clearstream cannot accept any claims resulting from late cash provisioning / late settlement of GC Pooling trades leading to overnight EUR cash balances.

The same applies for settlement of GC Pooling trades in Creation. Cash received after the respective CBL cash deadlines remains on the account overnight[1].

Currencies	Start of GC Pooling Settlement	End of GC Pooling settlement
EUR (central bank money)	07:00	17:30
USD	14:30	17:30
GBP	07:00	17:30
CHF	07:00	17:30
EUR (commercial bank money) for INT MXQ basket	07:00	17:30
DKK/NOK/SEK	07:00	17:30

1. Please refer to the specific funding deadlines for Euro GC Pooling trades, indicated in Appendix A. If purchases of securities are not funded on time, Clearstream cannot guarantee settlement.

Collateral pledge to central banks in the Euro system

Since the ECMS go-live, settlement of collateral pledged to Eurosystem central banks takes place in the T2S Platform. Clearstream as Triparty Agent (TPA) communicates with the ECMS in ISO 20022 format. Communication between Clearstream and its clients remains in ISO 15022 format. Clearstream will continue to support ISO 15022 message standards for its clients until further notice.

I. CBL acts in accordance with the 'Eligibility criteria for the use of Triparty Agents in Eurosystem Credit Operations' as laid out in Annex II of the ECB Guideline on Management of collateral in Eurosystem credit operations . As a result, prior to allocating assets to a triparty transaction, CBL will:

- Check that the ISIN is eligible based on the latest list of eligible assets provided by the Collateral Receiver;
- Check that the ISIN has not been excluded from use in the given transaction;
- "Check that there is not a forbidden close link between the issuer of the security and the counterparty based on the latest close link information provided by the Collateral Receiver
- Value the asset in accordance with the latest pricing information provided by the Eurosystem;
- Apply the own-use haircut in the event that the asset is subject to own use.

II. To support CBL in executing the tasks referred to above, CBL uses collateral management data provided to it on a daily basis by the Collateral Receiver. The data provided comprises:

- Eligible marketable assets data - information on changes to the list of eligible marketable assets, i.e. a list compiled in delta mode, is provided to CBL on a daily basis by the NCB). The delta list of eligible assets only includes assets:

  Issued in the CSD operating the SSS where the collateral is held; or

  Issued in a CSD whose SSS has an eligible link with the SSS where the collateral is held.

- A separate delta list of eligible marketable assets may be provided per NCB. The data provided iincludes the following elements:

  ISIN;

  NCB: BIC identifying the NCB for which the ISIN is eligible or ineligible.

- Pricing information - a list of prices for each eligible asset relevant to CBL, that is, a list compiled in full mode, is provided to CBL on a daily basis by the Collateral Receiver. This data is provided on a disaggregated basis and includes the following elements:

  Clean price;

  Accrued interest;

  Pool factor;

  Haircut, that is, standard haircut to be applied to the security by CBL;

  Close-link haircut, i.e. additional haircut to be applied to the security by CBL if the security is eligible for own-use by the counterparty;

  FX rate (relevant if the asset is denominated in a non-euro currency).

- Close links data - information on changes in close links data, i.e. a list compiled in delta mode, is provided to CBL by the Collateral Receiver only for counterparties with an active triparty transaction on each day in which there is a change in such data. The data provided includes the following elements:

  ISIN;

  Counterparty - BIC identifying the counterparty with a close link to the ISIN.

- The data specified above is provided by the Collateral Receiver to CBL at predefined times of each business day and applies from the start of the next business day, except for close links data which are provided early morning prior start of current business date to be applied same day . All data is provided using an ISO 20022 business file. In exceptional circumstances CBL may be requested to process and apply updated data on an intraday basis. In addition, CBL complies with the following rules in relation to the data:

  If the collateral receiver fails to provide such data at predefined times or if the dissemination of collateral management data is not possible for any other reason on a given day, by default CBL shall use the data provided at the previous business day. In case there is no pricing information (for example, in case of newly issued assets) , CBL, makes these asset not eligible.

  CBL must treat the data as confidential and use the data exclusively for the purposes of collateralising Eurosystem credit operations.

  Disaggregated pricing data may not be shared with collateral givers (that is, counterparties). CBL may disclose to the collateral giver, only the collateral value per ISIN.

- Substitution of collateral must be settled using procedures that link the release of the securities initially posted as collateral to the delivery of the new collateral, i.e. on a delivery-versus-delivery (DvD) basis. Alternatively, substitution of collateral may be settled by depositing the new collateral before the initially posted collateral is released.
- CBL has measures in place to ensure that the operating times and cut-off times specified in the Single Collateral Management Rulebook for Europe are extended in the event of emergency.
- NCBs reserve the right to request CBL to remove specific assets from the triparty transaction by 17:15 CET on each business day, for cause, for example due to the identification of a breach of risk control measures as part of an ex post check or in order to implement discretionary measures.

III. Clearstream's offering consists of the domestic NCB (National Central Bank) model via Deutsche Bundesbank (BBk) and Banque centrale du Luxembourg (BCL). Clearstream provides end-to-end collateral management and settlement services, comprising all the features included in the general triparty product offering:

- Daily mark-to-market, automatic margin calls, unlimited collateral substitutions and handling of custody events.
- NCBs as Collateral Receivers have the right to exclude specific ISINs during the business day until 17.15 CET.
- The collateralisation of exposures in favour of the NCB is performed under TCMS.

Collateral pledge to the Deutsche Bundesbank and Banque centrale du Luxembourg (BCL)

Clearstream acts as an intermediary for international clients, allowing them to pledge assets in favour of the German central bank as well as Banque centrale du Luxembourg (BCL) to access Eurosystem liquidity. Clients who subscribe to this service must meet the respective NCB's eligibility criteria, including having a securities account with the NCB and a branch in the country of the NCB. More information can be provided by the NCBs directly.

A. Due to ECMS standardisation rules, Clearstream offers access to Eurosystem liquidity via the same scheme for both BCL and BBk. Clients (Collateral Givers) can pledge ECB-eligible assets in favour of their NCB counterparty (Collateral Receiver) to benefit from this service.

B. Processes for Initiation, transaction increase, transaction decrease and Closure of an exposure are supported by messages send by the Collateral Giver and Collateral Receiver:

Message type	Instruction Matching	Deadline	Cancellation
Initiation	Required	17:00 CET	17:15 CET
Increase	Unilateral (automated matching)	17:20 CET	N/A
Decrease	Required	17:00 CET	17:15 CET
Closure	Required	17:00 CET	17:15 CET

All instructions are processed on a same-day basis. Unmatched instructions as well as instructions not fully processed (for example, Decrease Requests not positively confirmed by Collateral Receiver) are cancelled at the end of the day.

Please note that Initiation and Closure of exposures can alternatively be set up by Clearstream Operations in the Collateral Management system.

Collateral providers can request cancellation of instructions while they are still pending processing in the Triparty System. When instructions are matched in the collateral management system, they cannot be cancelled anymore.

Throughout the business day, on flow reporting on changed securities positions is provided to NCBs in form of delta reporting frequently - as a rule every 15 minutes - between 07.00 CET until 17.45 CET.

At the end of each business day, an additional Collateral Management report on stock is provided, which contains details of all securities allocated to a triparty transaction and which shall serve as a basis for the daily reconciliation to be performed by the NCBs as Collateral Receiver.

All securities movements resulting from the instructions are performed free of payment.

C. The high-level process of a transaction increase is outlined below:



Figure 2-8. Collateral Pledge to the Deutsche Bundesbank or BCL - Increase

Please note that re-use of securities purchased via GC Pooling trades will not be eligible as of ECMS introduction. Only one source account can be used by clients.

1. Upon receipt of the Collateral Giver's notification (Increase Request) indicating the new exposure amount, Clearstream automatically allocates collateral from a basket of ECB-eligible securities in favour of the Bundesbank / BcL.
2. The instruction of the client is automatically matched. The triparty agent sends a status update to the collateral giver.
3. Clearstream as TPA automatically allocates sufficient eligible securities as collateral to cover the transaction amount and sends a collateralisation confirmation to both the Collateral Giver and ECMS/Collateral Receiver once the requested transaction amount is fully collateralised. The Collateral Giver and Collateral Receiver receive the updated collateral reporting accordingly. If no collateralisation is possible, the collateralisation confirmation message is not sent. If partially

collateralised, Clearstream as TPA will send messages to the Collateral Receiver updating them every 15 minutes about the collateralisation status until the full transaction amount is collateralised and the collateralisation confirmation can be sent.

D. The high-level process of a transaction decrease is outlined below:

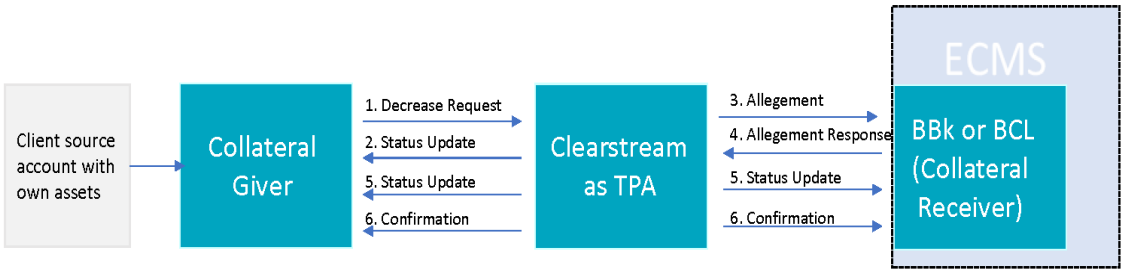


Figure 2-9. Collateral Pledge to the Deutsche Bundesbank or BCL - Decrease

Please note that re-use of securities purchased via GC Pooling trades will not be eligible as of ECMS introduction. Only one source account can be used by clients

1. The Collateral Giver sends a triparty instruction to Clearstream as TPA to request a decrease of the transaction amount (Decrease Request). Decrease Requests involving a Eurosystem NCB must be sent on a same day basis].
2. ECMS/Collateral Receiver sends a matching instruction to Clearstream as TPA provided that the NCB approves the decrease request. The original triparty instruction is updated to "matched". If not sufficient collateral is available to process the Decrease Request of the Collateral Giver, the Collateral Receiver queues the request until it can be satisfied. If the request cannot be satisfied, no matching instruction is sent from ECMS and the pending unmatched instruction from the Collateral Giver is cancelled automatically at end of day (17:15 CET). Alternatively, Clearstream as TPA can cancel an unmatched Decrease Request if instructed by the Collateral Giver.
3. Clearstream as TPA sends a status update of the original triparty instruction to the Collateral Giver and ECMS/Collateral Receiver indicating the processing of the Decrease Request.
4. Confirmation: Excess collateral is released automatically and flows back to the associated source account of the Collateral Giver. Both the Collateral Giver and Receiver receive the updated collateral reporting confirming the decrease.
5. Clearstream as TPA sends a status update of the original triparty instruction to the Collateral Giver and ECMS/Collateral Taker indicating the processing of the Decrease Request.
6. Confirmation: Excess collateral is released automatically and flows back to the associated source account of the Collateral Giver. Both the Collateral Giver and Taker receive the updated collateral reporting confirming the decrease.

E. The applicable service deadlines are also mentioned in the Appendix A of this document.

Collateral pledge to the U.S. Federal Reserve

U.S. depository institutions, as well as U.S. agencies and branches of foreign banks that meet the eligibility requirements of the Federal Reserve (Fed), can pledge collateral through Clearstream in favour of the Fed to access credit facilities, through the Discount Window framework[1].

Clearstream acts as a neutral agent, facilitating access to the Fed's liquidity through a complete collateral management service. CBL will check collateral eligibility, value and allocate collateral in

1. For further information about the Federal Reserve's liquidity services, please refer to their website at www.federalreserve.gov/.

accordance with the exposure communicated, mark the securities to market daily, perform automatic margin calls and substitutions and handle corporate actions.

The process is outlined below:

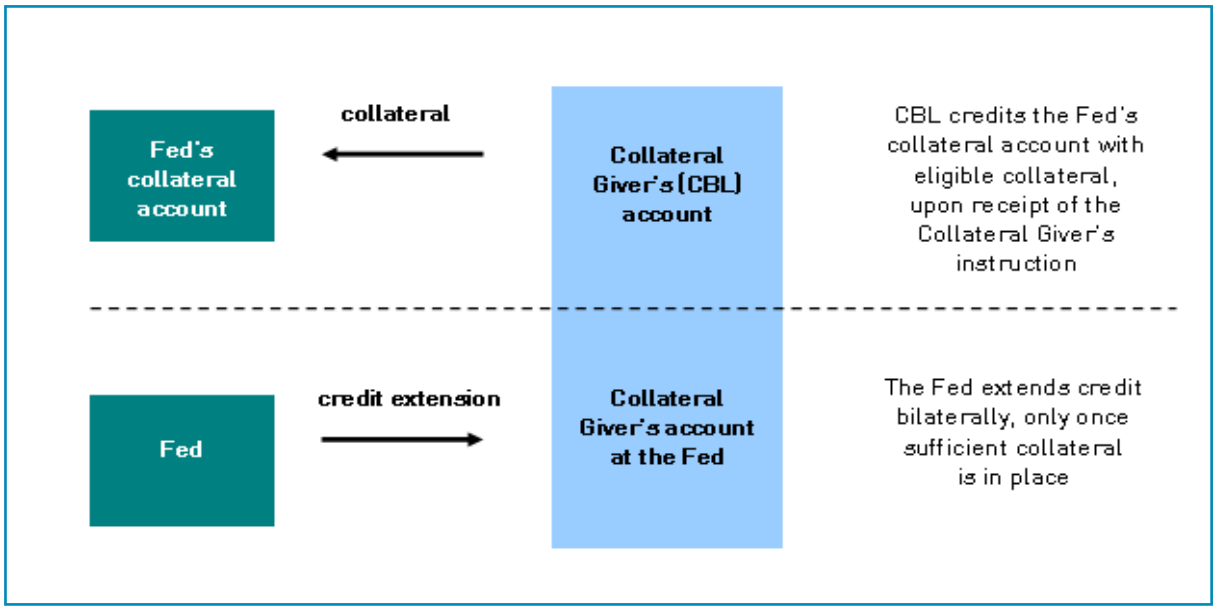


Figure 2-10. Collateral Pledge to the U.S. Federal Reserve

1. Upon receipt of the Collateral Giver's notification, Clearstream automatically selects eligible collateral and generates free of payment settlement instructions in favour of the Fed's collateral account. No matching notification from the Fed is required.
2. Clearstream sends detailed reporting on securities holdings to the Fed, on the basis of which the Fed will extend credit bilaterally to the Collateral Giver.
3. On a daily basis, the Collateral Giver can send an instruction to adjust the exposure. In the case of an increase in exposure, no matching notification from the Fed is required, but any decrease in exposure must be pre-approved by the Fed via a matching instruction.

Central Counterparty (CCP) margining

Clearing members can collateralise their exposures towards Central Counterparties (CCPs) under Luxembourg or German Law via Clearstream's Triparty Collateral Management Services.

CmaX, acting as collateral system being able to access collateral in several Custodian locations, enables clearing members to cover initial margin requirements for centrally cleared derivatives using the triparty collateral management model as well as Default Fund contributions and coverage of insufficient own capital.

The collateralisation of exposures in favour of CCPs is performed under TCMS in AutoAssign mode[1].

On a daily basis, the Collateral Giver can send an instruction to adjust the Collateral Amount Required[2] via all CBL communication channels.

For GC Pooling re-use into CCP Margining, a minimal nominal quantity of 5000 for fixed income securities is applied for collateral allocation (same treatment as for GC Pooling).

Re-use of purchased securities via the cleared Repo product GC Pooling for proprietary margining is possible. In case of exposure adjustment decreases for GC Pooling that require re-used papers,

1. The participation and setup requirements for Eurex Clearing are set out in the Guidelines for the Eurex Margining service.
2. In the case of a decrease in the collateral amount required, an authorisation request is systematically submitted to the CCP. The CCP's reply can be either an authorisation or a denial.

automatic claim decrease requests are sent to the CCP in order to enable settlement of the GC Pooling trade.

The process is illustrated below:

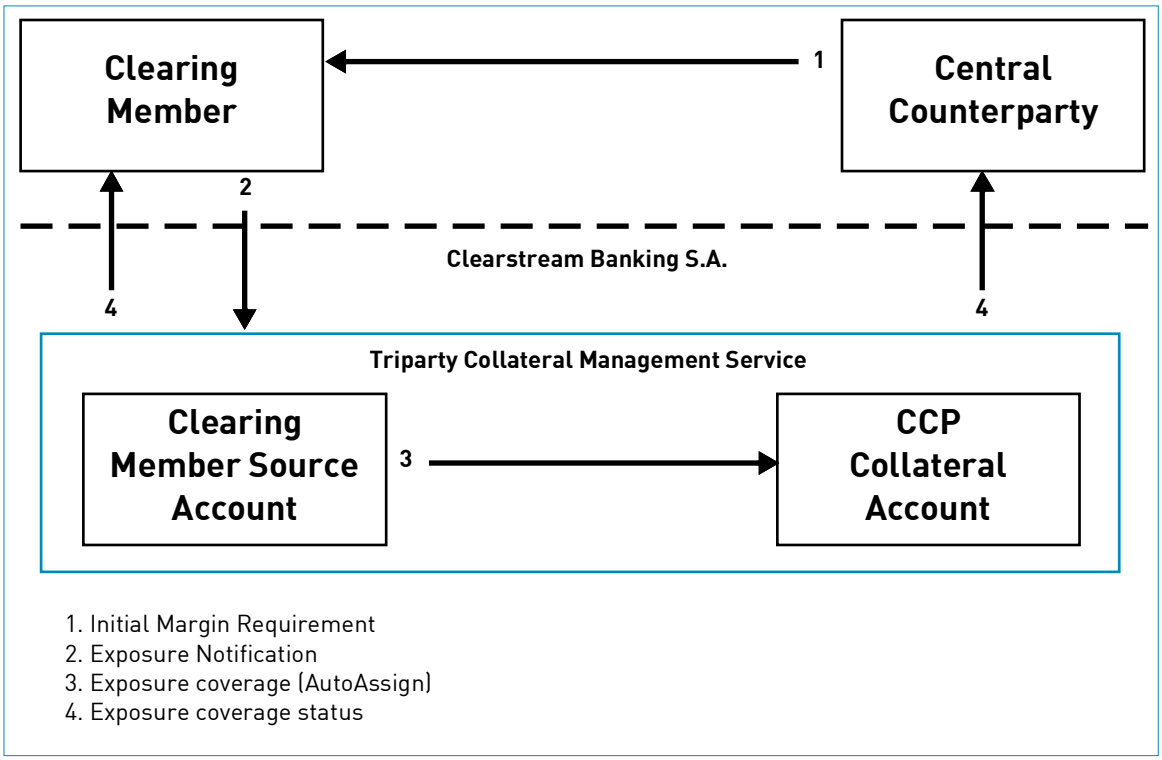


Figure 2-11. Central Counterparty (CCP) margining

GC Pooling re-use into UMR margining

Besides GCP re-use in favour of NCBs and Eurex Clearing outlined in the previous sections, clients can also re-use purchased assets via the cleared Repo product GC Pooling to cover bilateral margin requirements under UMR.

The collateralisation of exposures is performed under TCMS in AutoAssign mode and follows the same logic like CCP margining described above with the following specificities:

- An additional own Source account with proprietary assets is highly recommended in addition to the GC Pooling segregation account.
- In case of GC Pooling term legs requiring re-used papers, the system will automatically firstly draw substitution collateral from the own Source account to free up papers required for GC Pooling.
- Only if not sufficient substitution collateral is available on the own Source account, an automatic claim decrease requests is sent to the Collateral Receiver in order to enable settlement of the GC Pooling trade.

3. Links to electronic trading platforms

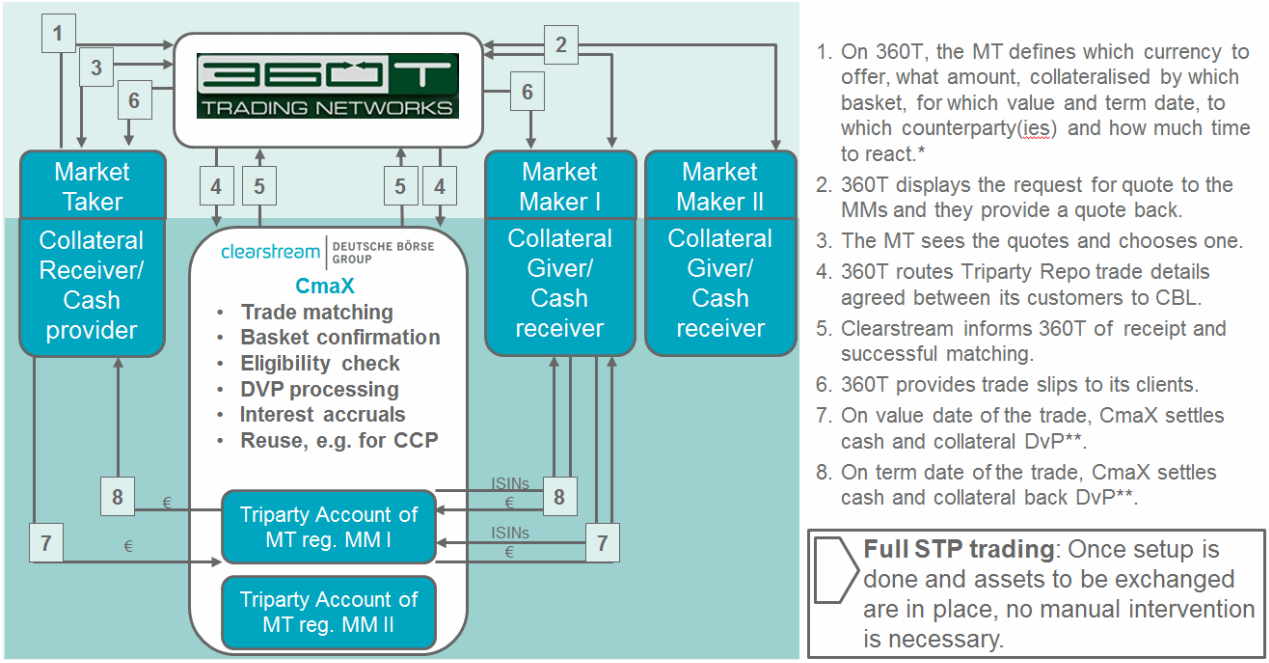
CBL has established partnerships with leading automated repo trading platforms, 360T and Bloomberg, opening new routes to liquidity for clients.

The service offers straight-through communication of transaction information from the point of trade execution/affirmation directly to CBL's integrated collateral and risk management infrastructure.

360T

CBL and 360T Trading Networks AG are cooperating in the delivery of a streamlined, fully automated triparty repo solution. Using 360T's sophisticated electronic trading platform, cash providers can request quotes for a given currency and required collateral basket combination from a multitude of potential Collateral Givers with "one click". Once a quote is hit, it is immediately transmitted to CBL's Liquidity Hub that ensures collateralisation, optimisation and substitution in a secure and efficient triparty environment.

Through the integration of 360T and CBL's platforms, traders get immediate feedback on the status of their trades and successful settlement in CBL's Liquidity Hub.



* All based on what is definitely possible for straight-through processing settlement on the Clearstream side.
** With delivery versus payment settlement, cash and collateral are exchanged simultaneously, thus avoiding any exposure to the counterparty in the course of the transaction.

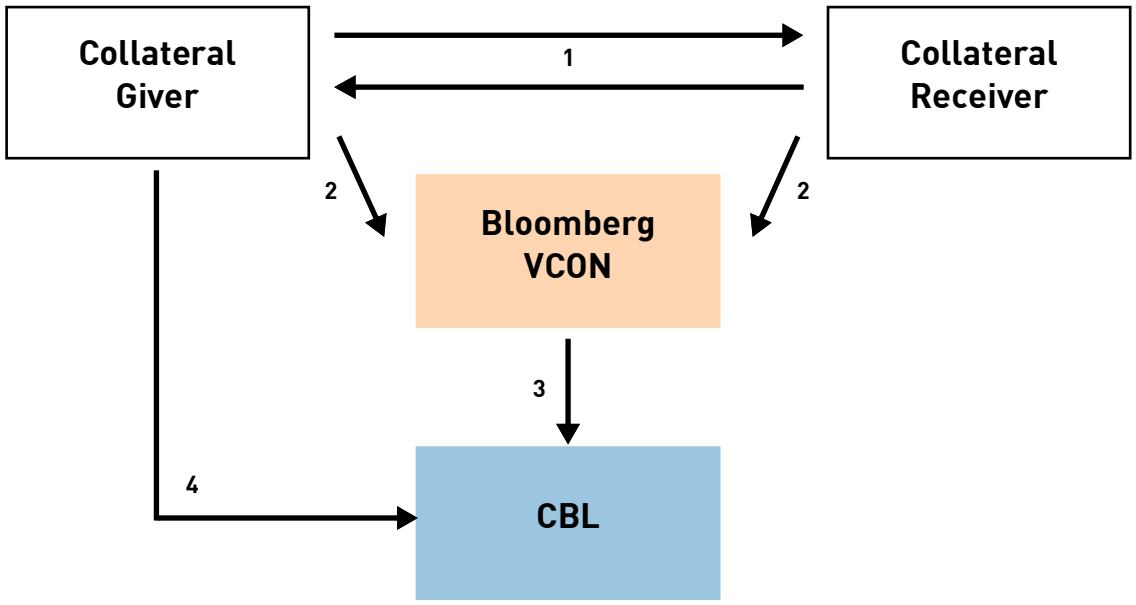
Figure 3-1. CBL's partnership with 360T – Trading

Bloomberg

The link between CBL's Global Liquidity Hub and Bloomberg's Professional Service offers clients faster and easier access to triparty repo through an automated order routing service.

Counterparties to a triparty repo transaction can initiate and execute the trade directly from their Bloomberg terminal, where it can be affirmed through Bloomberg VCON, indicating CBL as triparty agent. Bloomberg will automatically send the trade ticket to CBL via Swift MT527, on behalf of the Collateral Receiver, thereby removing the need for additional connectivity.

CBL will match this Swift message with the corresponding message from the Collateral Giver and proceed to automatically handle the allocation, substitution and optimisation of collateral with real-time reporting.



1. The counterparties execute the trade bilaterally.
2. Trade affirmation takes place through Bloomberg VCON matching and allocation functionality.
3. Bloomberg sends an MT527 message automatically to CBL communicating the trade initiation on behalf of the Collateral Receiver.
4. The Collateral Giver sends a corresponding MT527 that CBL will match with the Collateral Receiver's message before proceeding to process and collateralise the trade.

Figure 3-2. Triparty Repo Service (TRS)

eTriparty - Electronic Triparty Repo (TRS)

eTriparty combines electronic trading on the Eurex Repo platform with Clearstream's fully automated collateral management and settlement services.

Supports standardised baskets, multi-currency funding, settlement in Central or Commercial Bank Money, collateral reuse and real-time substitution for enhanced liquidity and efficiency.

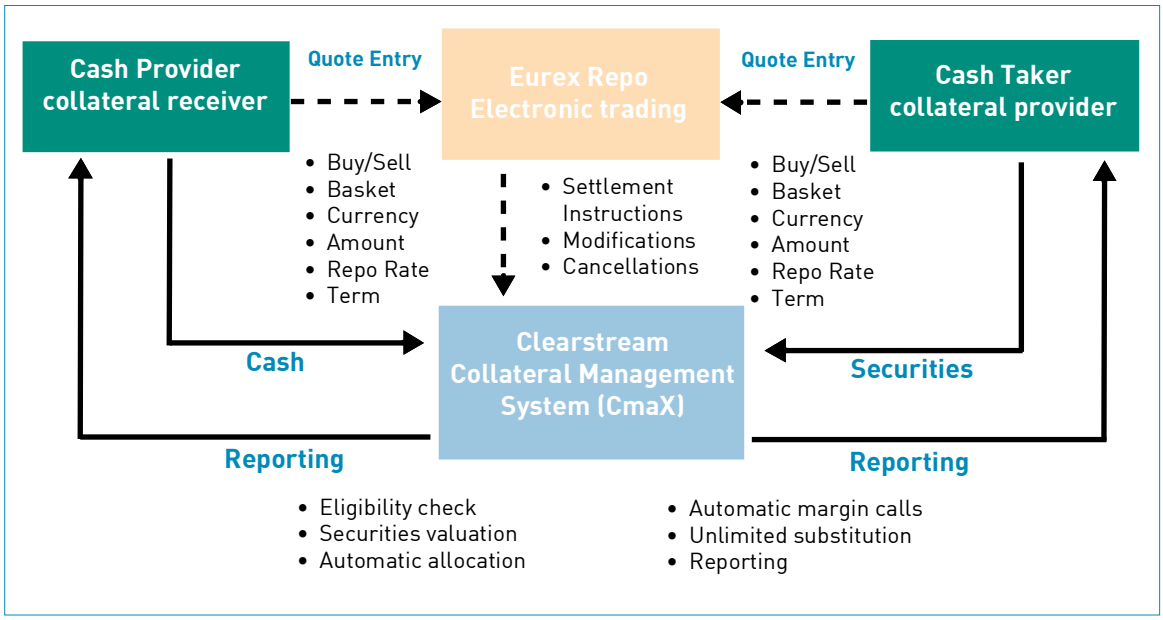


Figure 3-3. eTriparty - Electronic Triparty Repo (TRS)

4. Getting started

Documentation

To facilitate the account opening process, the requirement to have a triparty contract in place per underlying bilateral relationship has been replaced by a single service agreement per client, signed bilaterally with CBL. As detailed below, a list of all accepted counterparties (with whom it is assumed that a bilateral contract is in place) will be added as an appendix.

Legal agreements

Collateral Givers and Collateral Receivers must provide an executed copy of the service agreements[1], as appropriate:

- Collateral Management Service Agreement (GCMSA) for Collateral Givers; and/or[2]
- Collateral Management Service Agreement (GCMSA) for Collateral Receivers.

The services provided by CBL under the GCMSA are independent of the provisions and obligations of the respective parties under the principal agreement and do not require the Collateral Giver and/or Collateral Receiver to be principal(s) under, or a party to, the relevant principal agreement in relation to which the services pursuant to the GCMSA are provided. Therefore the Collateral Giver and/or Collateral Receiver may enter into the relevant GCMSA on behalf, or as representative of, the respective principals under the principal agreement. This does however not affect the role, position and responsibilities of the Collateral Giver and Collateral Receiver as sole principals under the respective GCMSA.

Note: Clients with a Transaction Bank Agreement must indicate this in the relevant section of Appendix A to the GCMSA. By signing this Appendix, the client acknowledges that all relevant collateral management reporting will be disclosed to both the counterparty and the Transaction Bank.

Collateral Givers and Collateral Receivers must provide the following, as appropriate:

- Appendix A: Counterparty acceptance list and collateral eligibility criteria.

  The counterparties with which Collateral Receivers want to set up a triparty relationship must be listed in this document[3], as well as the service type and the applicable collateral eligibility criteria. This will result in account openings in the relevant Custodian location (Creation/6-series or CASCADE/T2S) according to chosen service type (see previous chapter).

- AutoAssign Supplement (Collateral Giver only)

  This is a bilateral agreement between the Collateral Giver and CBL that authorises the automatic selection of securities from the Collateral Giver's account.

- Signed Indemnity Letter for CBL's Global Securities Financing Services

  This document enables Collateral Receivers and Collateral Givers to receive reports via email.

- Completed Triparty Collateral Management Client Operational Profile

  This document, which must be completed by any Collateral Receiver and Collateral Giver and sent to CBL's Global Securities Financing specialists, enables CBL to obtain key information from

1. Covering all CBL Triparty Collateral Management Services (TRS, TSLS1, TSLS2, TCMS), including the collateral reuse functionality.
2. Clients that want to benefit from the reuse functionality are required to execute both agreements.
3. If the holder of the Collateral Giver's source account is a different entity from the Collateral Giver, then the names and contact details of both entities must be listed in Appendix A.

both counterparties to set up client operational preferences and facilitate the account opening process.

To obtain any of these documents or for further assistance, please contact your designated Global Securities Financing specialist or go to the Clearstream website.

Note: For clients that do not have a CBL account, additional documents may be required.

Principal agreements

When exposure instructions are received for processing in CmaX, CBL assumes that the appropriate bilateral principal market agreement has been executed between the operating parties. The setting up of such an agreement is within the sole responsibility of the counterparties.

The principal agreements can include:

- Global Master Repurchase Agreement (GMRA);
- Clearstream Repurchase Conditions (CRC);
- Clearstream Pledge Conditions (CPC);
- European Master Agreement (EMA);
- Association du Forex et des Trésories de Banques (AFTB);
- Rahmenvertrag für echte Pensionsgeschäfte (REPOS);
- Overseas Securities Lending Agreement (OSLA);
- Global Master Securities Lending Agreement (GMSLA);
- ISDA Clearstream Collateral Transfer Agreement (CTA);
- ISDA Clearstream Security Agreement;
- ISDA Credit Support Annex (English Transfer of title).

Clearstream Repurchase Conditions (CRC)

The CRCs represent a simpler version of other industry master repurchase agreements available on the market. The CRCs target "plain vanilla" triparty repo only and forms a unique link to our GCMSA, tying it to Clearstream's triparty environment.

New triparty entrants, in particular corporates and non-banks, can take advantage of the new agreement to shorten time to market and achieve one-stop counterparty access. If two counterparties under the CRC want to extend their relationship to other forms of repo (Bilateral/Classic or Buy and Sell back), they can enter into an Industry Master Repurchase Agreement and terminate the CRC.

The CRCs are governed under Luxembourg law and are dedicated to collateral transactions that are managed in the CBL triparty environment. To sign up to the CRCs, clients are only required to send CBL an executed copy of Appendix E.

Clearstream Pledge Conditions (CPC)

The CPCs are made available by CBL to its clients to facilitate compliance with margin posting requirements on derivatives transactions, as well as other bilateral pledge arrangements including posting and/or receiving haircuts under pledge for repo transactions.

The CPCs are governed under Luxembourg law and are dedicated to collateral transactions that are managed in the CBL triparty environment. Clients who choose to sign the CPCs bilaterally with one or more counterparties are required send CBL an executed copy of Appendix E.

ISDA Clearstream Collateral Transfer Agreement (CTA)

The CTA governs transfers of margin in the context of uncleared OTC derivatives transactions concluded under English law ISDA master agreements and/or New York law ISDA master agreements.

This is an agreement drawn up in cooperation with ISDA, which can be entered into bilaterally between the counterparties as an alternative to the ISDA Credit Support Deed (CSD) to provide initial margin (IM) in connection with the ISDA master framework agreement. The CTA contains substantially the same terms as the ISDA CSD, but is adapted to reflect the CBL triparty mechanics set out in the GCMSA.

Counterparties who enter into the Clearstream CTA are also required to send CBL an executed copy of Appendix E.

ISDA Clearstream Security Agreement

The Clearstream Security Agreement is designed to be used in conjunction with the ISDA master framework agreement and the Clearstream CTA either under English or New York law.

The Clearstream CTA and Security Agreement jointly establish the credit support relationship between the parties to the main framework agreement, that is, the ISDA Agreement.

The Agreement is governed by Luxembourg law and is entered into bilaterally by the counterparties. Counterparties who sign the Clearstream Security Agreement are also required to send CBL an executed copy of Appendix E.

Service types overview

Contracts will be governed by Service Types as selected in Appendix A and B of the GCMSA together with the counterparts / baskets.

Overview of CmaX Services and Service types:

Service	Service Type	Description	Custodian locations
TRS	TRS-CRC	Triparty Repo Service (TRS) with Clearstream Repurchase Conditions	CBL
TRS	TRS-OTH	TRS with other Master Repurchase Agreement (including also GC Pooling)	CEU and CBL
TCMS	TCMS-PL	Triparty Collateral Management Service (TCMS) with Pledge	CEU and CBL
TCMS	TCMS-TT	TCMS with Transfer of Title	CEU and CBL
TCMS	TCMS-TT CTA	TCMS Transfer of Title in relation to IM ISDA/CBL Collateral Transfer Agreement	CBL
TCMS	TCMS-TT PB	TCMS Transfer of Title with Pledge Back in relation to CCP	CEU and CBL
TCMS	TCMS CPC	TCMS with Clearstream Pledge Conditions (CPC)	CBL
TCMS	TCMS CPC - CTA	TCMS with CPC in relation to IM ISDA/CBL Collateral Transfer Agreement	CBL
TCMS	TCMS SA - CTA	TCMS IM ISDA/CBL Security Agreement in relation to IM ISDA/CBL Collateral Transfer Agreement	CBL
TCMS	TCMS PL - CTA	TCMS Pledge in relation to IM ISDA/CBL Collateral Transfer Agreement	CBL
TSLS	TSLS1-PL	Triparty Securities Lending Service Level 1 (TSLS1) - Pledge	CBL

TSLS	TSLS1-TT	TSLS1 - Transfer of Title	CBL
TSLS	TSLS1-CPC	TSLS1 - Clearstream Pledge Conditions	CBL
TSLS	TSLS2-PL	Triparty Securities Lending Service Level 2 (TSLS2) - Pledge	CBL
TSLS	TSLS2-TT	TSLS 2 - Transfer of Title	CBL
TSLS	TSLS2-CPC	TSLS2 - Clearstream Pledge Conditions	CBL

Additional product-specific legal documentation might be required depending on the product chosen. Please contact your Relationship Manager for details.

Account structure

Both the Collateral Receiver and the Collateral Giver are required to have a CBL account.[1]

Collateral accounts are opened by CBL upon receipt of Appendix A or B to the Collateral Management Service Agreements (GCMSAs), duly signed or notified by Swift message in accordance with the GCMSAs. Collateral accounts are set up in accordance with the Client Operational Profile (Appendix D to the GCMSAs). Collateral accounts can be located in CBL or at an external custodian (for example, CEU).

Collateral accounts fall into two categories:

- Transfer of title structures - either the Collateral Giver or usually the Collateral Receiver is the collateral account holder;
- Pledge structures - usually the Collateral Giver or the Collateral Receiver is the collateral account holder.

Note: In pledge structures, the Collateral Giver is the legal owner of the securities throughout the trade life cycle. must submit the relevant tax certification forms. Submission of tax certification forms however depends on the underlying asset type, the market in which the collateral is issued and the local tax rules

1. Collateral Givers using only External sourcing are also required to open a central account with CBL.

Flexible account setup for Collateral Receivers

Triparty collateral accounts can be freely structured according to the Collateral Receiver's own objectives. By choosing to aggregate all the collateral received from their triparty activity into a reduced number of collateral accounts, they can ensure segregation along business lines, simplify reconciliation and facilitate the tax exemption process.

Figure 4-1 compares the following options, available to Collateral Receivers.

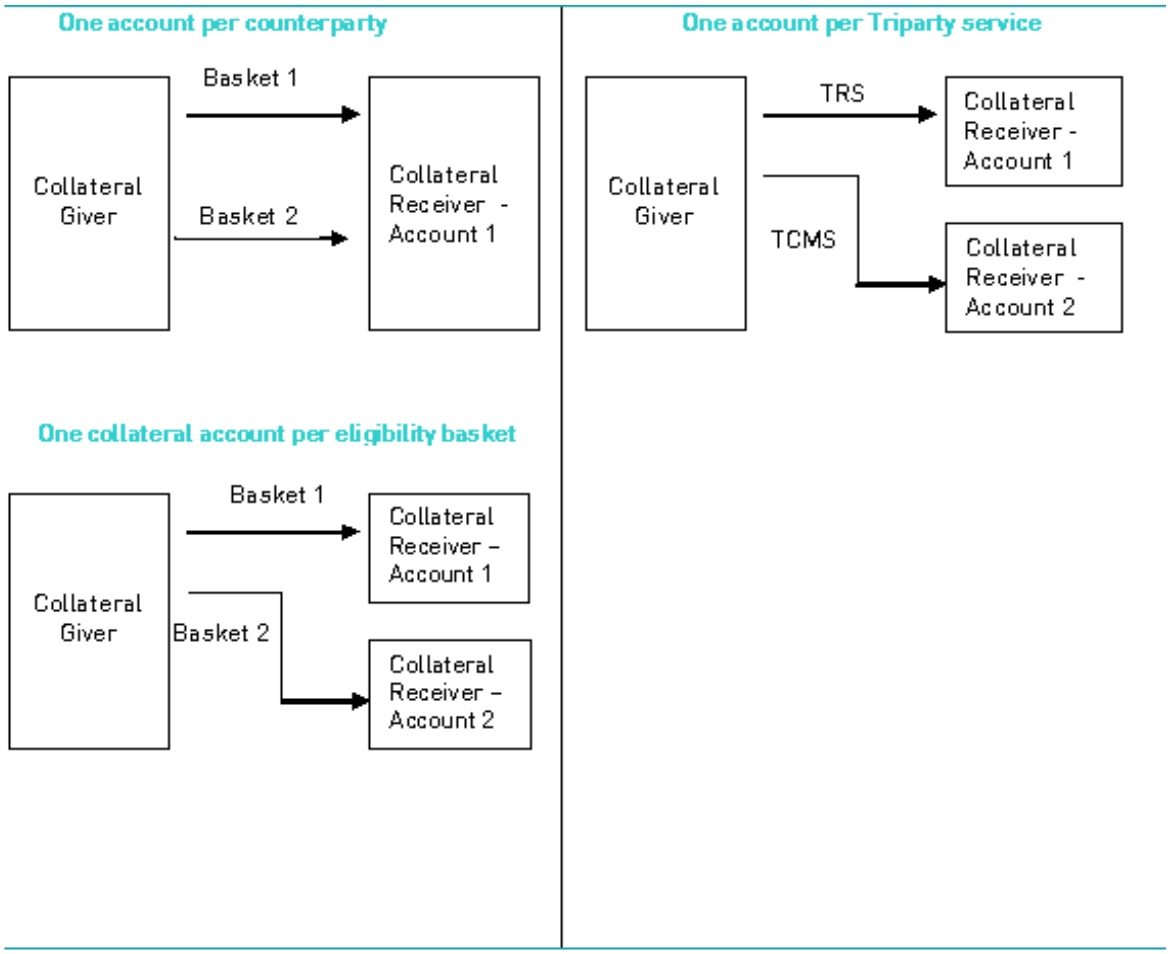


Figure 4-1. Flexible account setup for Collateral Receivers

Multiple collateral source account option for Collateral Givers

Collateral Givers that have subscribed to AutoAssign can define and prioritise multiple proprietary accounts within CBL as collateral source accounts to collateralise different exposure types automatically. For this setup it is required to define a new account as a central account, following the example in Figure 4-2 below. Through this configuration, the client will have the option to either give the same priority to all source accounts or to give a (specific) priority to the source accounts.

If the same priority is given to (all) accounts, AutoAssign will select the collateral across the different accounts. If different priorities have been defined by the client, AutoAssign will first select the collateral from source accounts with priority 1 after which collateral will be selected with priority 2 followed by priority 3 etc.

A standing internal cash book transfer instruction can be set up such that CmaX will automatically perform the book transfer between the central account and the client's main account, either at the opening or at the closing of the exposure.

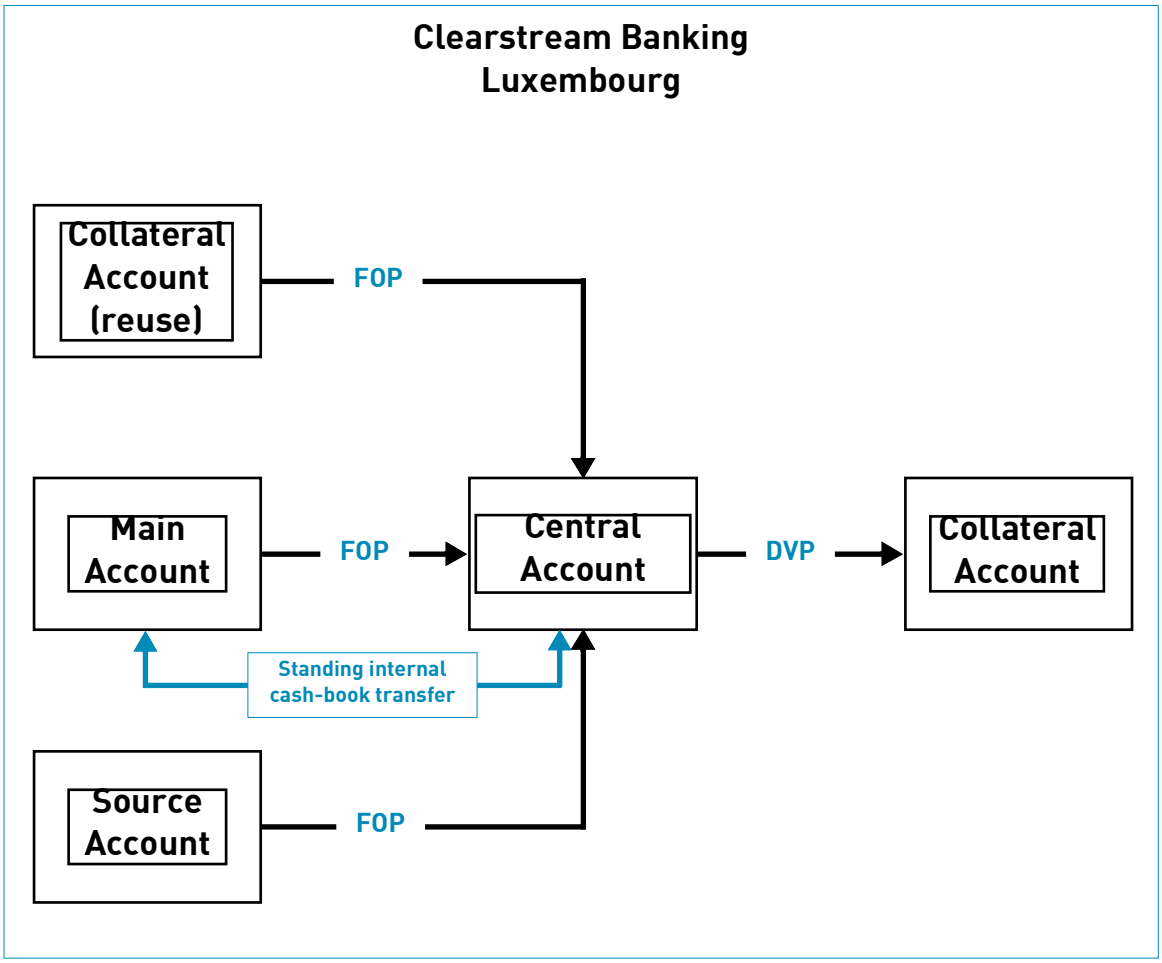


Figure 4-2. AutoAssign - multiple source accounts, new account as central account

Sourcing options

Domestic assets[1] held with CEU or local agent banks[2] can be leveraged for collateral purposes in CBL's triparty collateral management service without impacting domestic clearing and settlement processes and the chosen local custody solution. By defining their account(s) with CEU and/or with partnering

1. External Sourcing supports Fixed Income, Equities as well as ETF's. The service does not support cash.
2. External Sourcing from accounts with local agent banks is made possible through Clearstream's Liquidity Hub Connect Service.

custodian banks as a source account, clients can pool assets held at these locations together with their assets held at CBL to be used as collateral within Clearstream's triparty collateral management services. For GC Pooling and CCP margining products, also vice versa CBL accounts can be designated as source accounts for Collateral accounts in T2S; in these cases, no Central account is required. Processes and documentation apply accordingly.

Upon subscription to the service, CEU and/or partnering custodian banks will provide full details of the client's locally held assets to CBL. CmaX can then select assets out of the account(s) at CEU and/or the custodian bank and send the necessary settlement instructions to transfer the assets to CBL's sub-custodian by which they can be used for collateral management.

Clients subscribing to External Sourcing are required to provide an executed Power of Attorney (POA) as well as an executed copy of Appendix F to CBL.

Note: External Sourcing is only available for clients that have subscribed to Auto Assign.

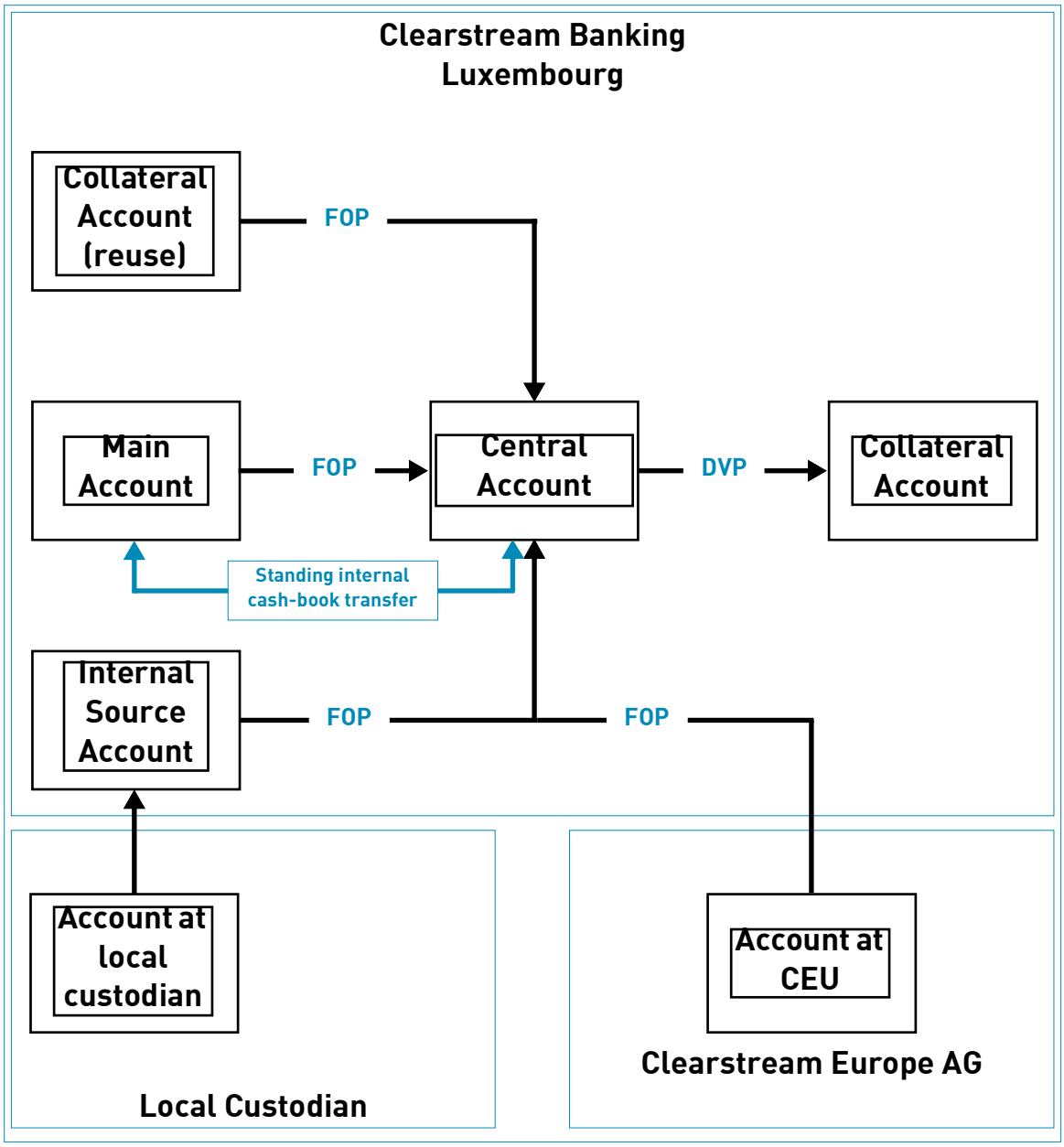


Figure 4-3. External Sourcing from an account at a local custodian and an account at CEU

For further information about eligible markets, setup requirements and service details, please contact your GSF Sales and Relationship representative (see " Client services" on page -i.

Specific collateral source account structure for Collateral Givers

Collateral Givers have the option of implementing one or more specific collateral source account structures, so as to better control the flows of collateral allocation and target them to meet specific business structures or needs.

This option enables clients to define specific source accounts per contract, "earmarking" them for allocation to specific collateral accounts. This "one-to-one" account structure complements the multiple source account option described in the previous section, thus offering clients full flexibility to tailor the collateralisation process to their requirements.

Note: If multiple collateral source accounts are being used, the Collateral Giver will be required to open a Central account with CBL.

Cash management options for Collateral Receivers

Collateral Receivers can define their cash management profile in Appendix D of the GCMSA Agreement.

- Clients with a CBL main or cash account:

  At the opening of a triparty repo transaction, Collateral Receivers provision their main or cash account with CBL. CBL will generate an internal transfer of funds to debit the Collateral Receiver's main CBL account and credit the related collateral account.

  In case of a positive repo interest rate, at the closing of a triparty repo transaction, CBL will debit the repo principal amount plus interest from the Collateral Giver's source account and credit the collateral account. In case of a negative repo interest rate, at the closing of a triparty repo transaction, CBL will debit the repo principal amount minus interest from the Collateral Giver's account and credit the collateral account.

  Upon transaction closing, CBL will generate a payment instruction to transfer the resulting cash proceeds to the Collateral Receiver's main or cash account with CBL.

- Clients with no CBL account:

  At the opening of a triparty repo transaction, Collateral Receivers instruct their cash correspondent bank (CCB) for the relevant currency[1] to transfer the cash value of the transaction to CBL's CCB for that currency in favour of the related collateral account. CBL will automatically generate the pre-advice of entry of funds on behalf of the Collateral Receiver to the collateral account.

  Subject to specific conditions, clients can set up a direct transfer between their collateral accounts and their CCB account(s) so that the funds and repo interest are transferred to the CCB at the closing of a triparty repo transaction.

Cash shaping functionality

Collateral Receivers have the option of "shaping" their cash instructions for DVP triparty trades. This functionality enables cash instructions to be split into 'shapes', or fractions of the total cash amount, which settle as cash becomes available throughout the day, thus smoothing the settlement process.

1. For cash transfers in EUR, Collateral Receivers must credit Clearstream's TARGET 2 account at the Banque centrale du Luxembourg.

In Appendix D of the GCMSA, Collateral Receivers can indicate whether they wish to implement the shaping functionality and, if so, for which currencies. The minimum possible shape per currency is 50 million.

Example: The following example illustrates the initiation of a triparty repo trade with an exposure amount of EUR 150 million. The Collateral Receiver has opted for a maximum shape size of 50 million for EUR cash instructions.

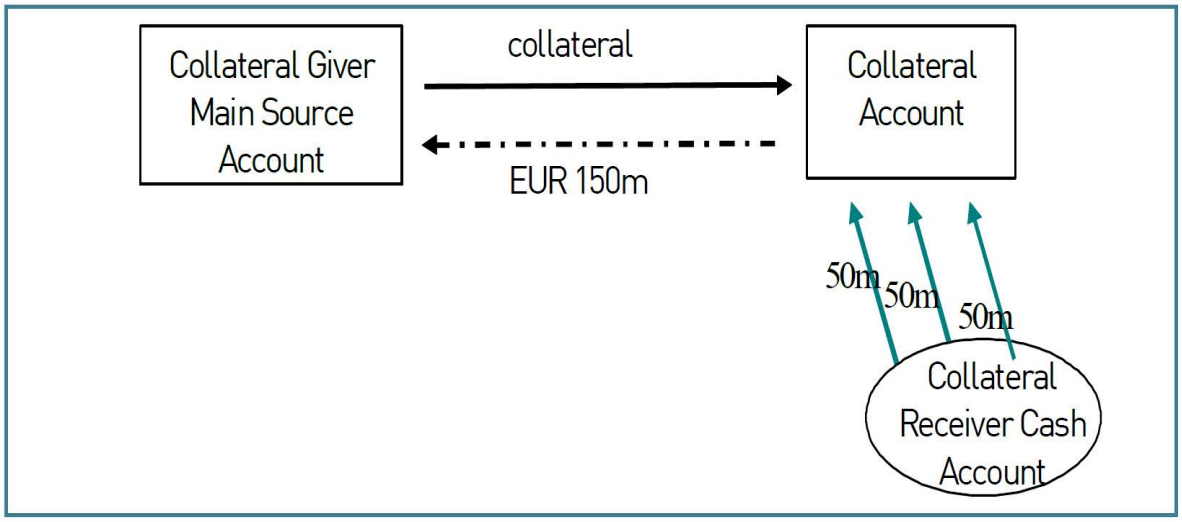


Figure 4-4. Cash shaping

The Collateral Receiver funds the collateral account via an automatic transfer of cash from his Clearstream cash account in three shapes of 50 million. Should only 120 million be available upon trade initiation, two shapes of 50 million will settle immediately, enabling partial settlement of the trade, with the final shape settling upon receipt of the remaining 30 million.

Upon closing of the trade, the Collateral Receiver can choose to bundle principal and interest together in a single payment to his cash account, or opt for two separate cash movements. This will be taken into account in conjunction with the shaping functionality.

Note: If a client has opted for collateral re-use, any cash shaping option selected under his Collateral Receiver profile will also apply to his activity as Collateral Giver.

Umbrella credit and collateral facilities

Collateral Receivers are required to set up an umbrella credit and collateral structure, with the benefit of simplified and more efficient cash and collateral management.

Triparty accounts are linked to Clearstream source account(s), forming a consolidated pool of collateral that can be used to secure clients' credit lines, thus easing credit usage both for triparty and settlement activity. In addition, sharing credit lines across multiple accounts contributes to the timely settlement of triparty trades, and smoothes out intraday discrepancies resulting from different currency deadlines.

Figure 4-5 indicates the five possible account structures available to Collateral Receivers to define the role of each account in the umbrella facility.

Each account is defined as a function of the following attributes:

- Whether it can use collateral from the shared collateral pool;
- Whether it contributes collateral to the pool; and
- Whether it shares the umbrella credit line(s).

Account option	Use shared collateral pool	Contribute collateral to the pool	Share credit line(s)
1	✓	✓	✓
2	✓	-	✓
3	-	-	✓
4	✓	-	-
5	✓	✓	-

Figure 4-5. Umbrella credit and collateral facility

For further information on setting up an umbrella credit and collateral structure, please contact your CBL Relationship Officer.

Collateral allocation options for Collateral Givers

CBL offers the possibility of processing collateral selection in either of the following modes:

- AutoAssign (AA) mode;
- Manual mode.

AutoAssign (AA) mode

Collateral Pool

In the GCMSA, Collateral Givers can specify which account(s) form part of their eligible collateral pool for allocation in triparty. They can also assign a selection sequence to determine the order of priority for sourcing collateral from each account and, in the case of reuse, the order for sourcing own versus received collateral[1].

All eligible assets held in the specified accounts will be considered for collateral allocation, with the following exceptions:

- Securities marked for pending delivery eligible for settlement;
- Securities prioritised for Bridge delivery;
- Securities subject to certain upcoming income events and corporate actions (see "Custody events and corporate actions" on page 9-77 for further information);
- Receipt instructions with status "on hold"[2].

Receipt and delivery instructions that are "linked" to one or more other instructions will only be taken into account by AutoAssign after the successful settlement of all linked instructions.

Characteristics

Clearstream's extended real-time settlement window runs between 21:30 CET on SD-1 and 20:05 CET on SD. The AutoAssign module runs continuously during this period (between 22:30 on SD-1 and 19:45 on SD).

- All initiations of new triparty exposures are treated in real time, upon receipt of matching instructions from both counterparties.
- Collateral is automatically selected from the Collateral Giver's collateral pool according to the eligibility profile defined by the Collateral Receiver.
- In the event of a partial opening, a collateral swap (substitution of collateral between collateral accounts) is triggered immediately, to attempt to fully cover all exposures.

1. The order of priority for sourcing own versus received collateral is determined by the client in their Client Operational Profile.
2. The system will not trigger any automatic substitutions to meet delivery instructions that are "on hold".

- Collateral swaps are initiated to facilitate substitutions or to reduce or eliminate (partial) fails. A swap is triggered provided that differences in eligibility profiles between a Collateral Giver's counterparties create the opportunity for a three-way substitution. The following operations are triggered three times per hour, generating settlement instructions:
- Substitutions are triggered to meet settlement deliveries or to reimburse borrowed positions incurred through Clearstream's Automated Securities Lending and Borrowing Service.
- A mark-to-market of collateral (and loan) securities automatically triggers margin calls in response to any updates in security prices.
- In advance of a number of custody events and/or corporate actions, subject to certain conditions, substitutions are triggered in order to facilitate the reconciliation process.

Collateral selection order

Default allocation order

When selecting collateral to cover a triparty exposure, AutoAssign allocates collateral in ascending order of quality, in accordance with the predefined sequence shown in Figure 4-6 below:

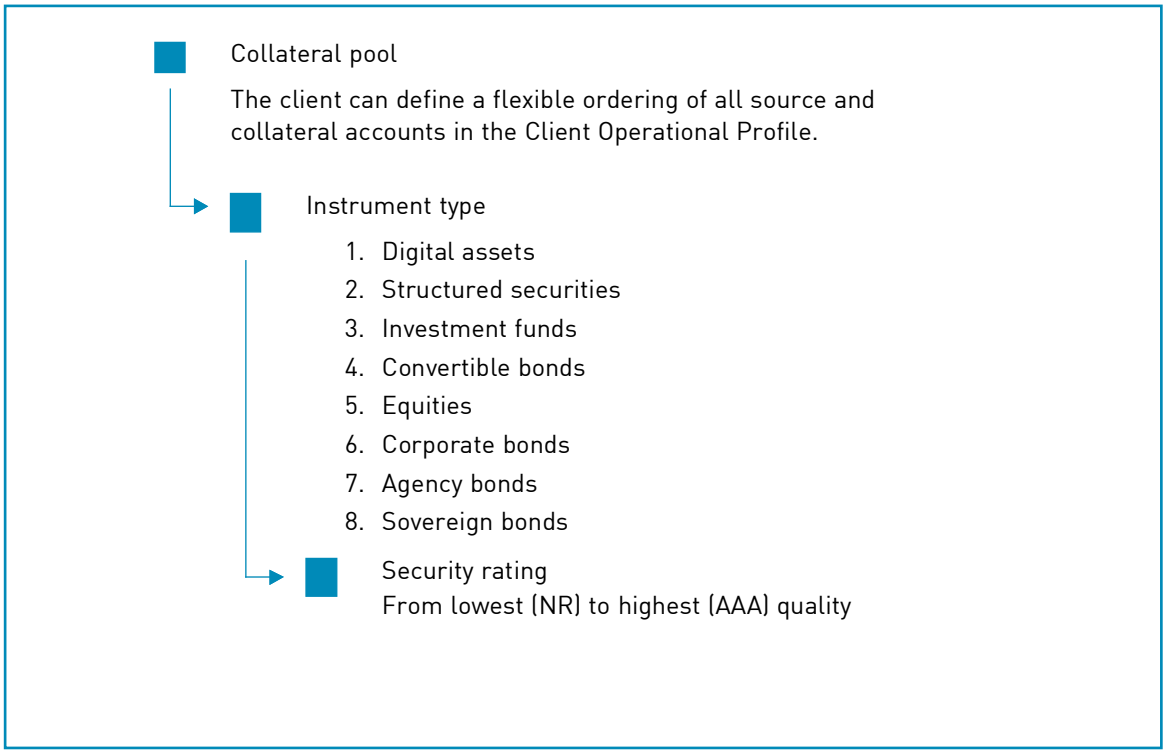


Figure 4-6. AutoAssign default collateral allocation order

This allocation order will ensure that, while the eligibility profile defined by the Collateral Receiver is respected throughout the duration of the trade, the Collateral Giver's portfolio of securities is deployed in an efficient manner and the possibility of fails on future transactions is reduced. If the client has enabled the External Sourcing from their account(s) with CEU, the same asset can be held in a source account with CBL and in a source account with CEU. In this situation AutoAssign will allocate for the purpose of settlement efficiency, the position which is already in the settlement system of CBL.[1]

1. Assets allocated through External Sourcing from a local custodian are always considered to be in the settlement system of CBL.

Default withdrawal order

When withdrawing collateral back to the Collateral Giver's account of origin, AutoAssign applies the reverse of the allocation order, thus returning the highest quality collateral first.

The following additional factors will be taken into account during the withdrawal sequence:

- Ineligible collateral pieces;
- Short positions;
- Reused positions.

The withdrawal sequence is illustrated in Figure 4-7 below.

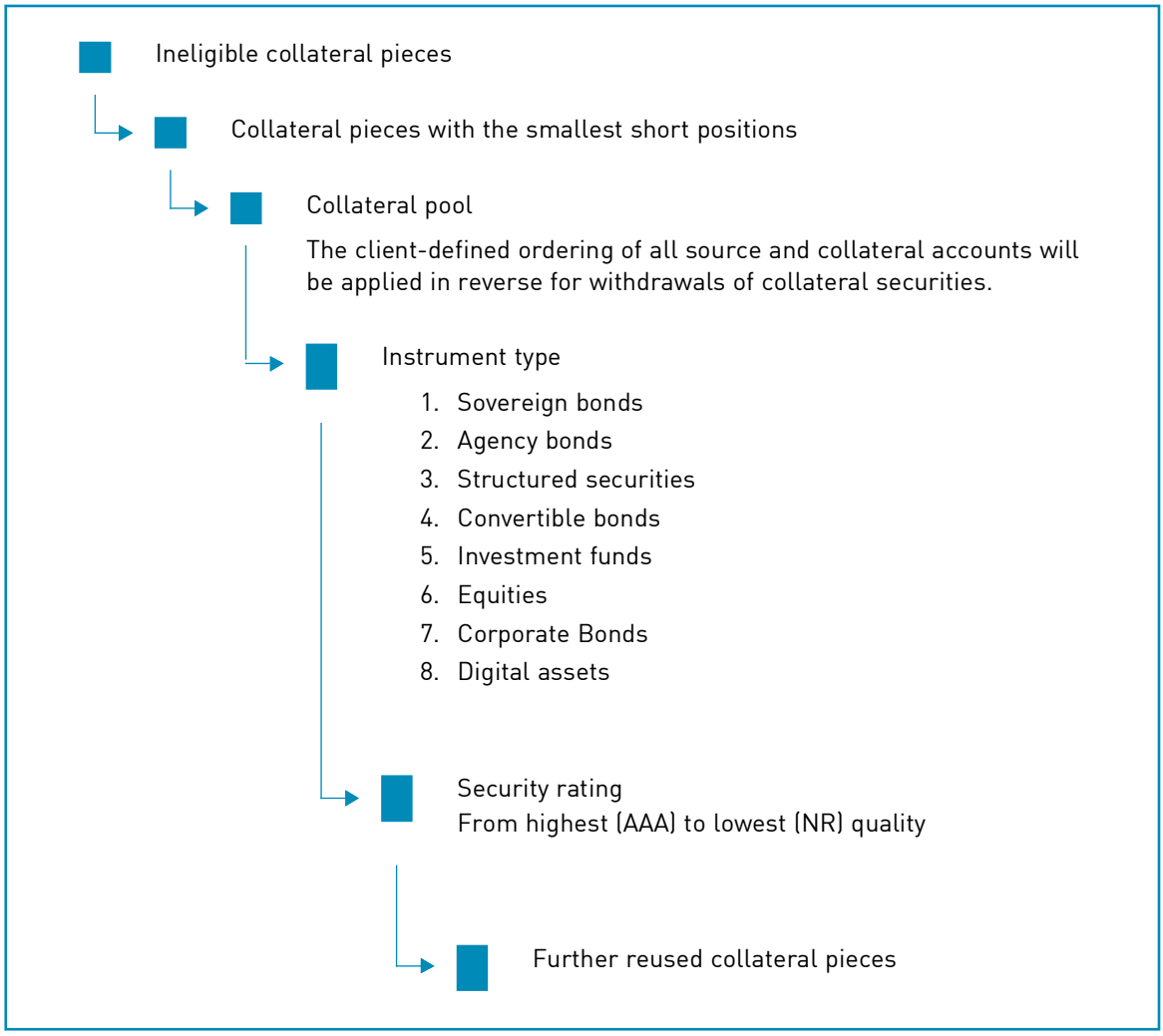


Figure 4-7. AutoAssign default collateral withdrawal order

If the client has enabled the External Sourcing from its account(s) with CEU, the same asset can have been allocated by Auto Assign from a source account with CBL and in a source account with CEU. In this situation Auto Assign will withdraw for the purpose of settlement efficiency, the position which had been allocated from a source account with CBL[1].

1. Assets allocated through External Sourcing from a local custodian are always considered to be in the settlement system of CBL.

Predefined allocation order

Collateral Givers can opt to add haircut as an additional criteria to the default AutoAssign allocation order in accordance with their business needs.

Clients can decide on the following options regarding the consideration of haircuts during the securities allocation (lowest haircuts first):

1. Haircuts as first criterion.
2. Haircuts considered before Instrument Type.
3. Haircuts considered after Instrument Type but before Security rating.
4. Haircuts considered after Security rating.

Resulting impacts on the allocation order for 1-4 are depicted below. Same logic will be applied to withdrawals of collateral in reverse order:

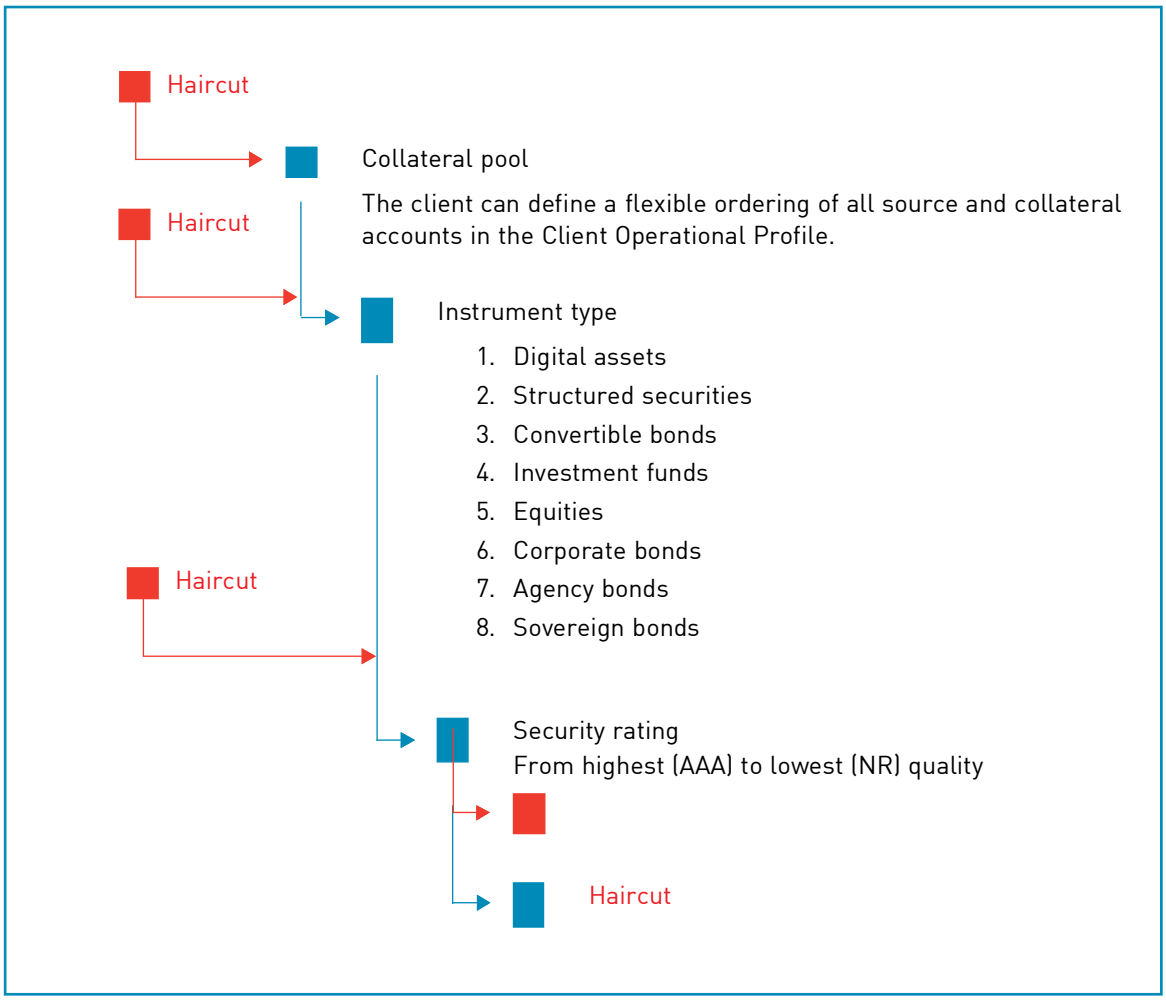


Figure 4-8. Predefined allocation order

Customised allocation order

Collateral Givers can opt to customise the AutoAssign allocation ordering in accordance with their business needs. This option gives clients the tools to minimise funding costs and enables a closer control over asset portfolios.

Clients have the following options for the consideration of haircuts:

1. No haircuts applied.
2. Haircuts as first criteria.
3. Haircuts considered before / as part of / after combined criteria.

Same logic will be applied to withdrawals of collateral in reverse order.

The customised ordering is set up at participant level and applies to all the triparty activity across counterparties, eligibility profiles and transactions. Collateral Givers can define their customised allocation order on the basis of the criteria shown in Figure 4-9 below.

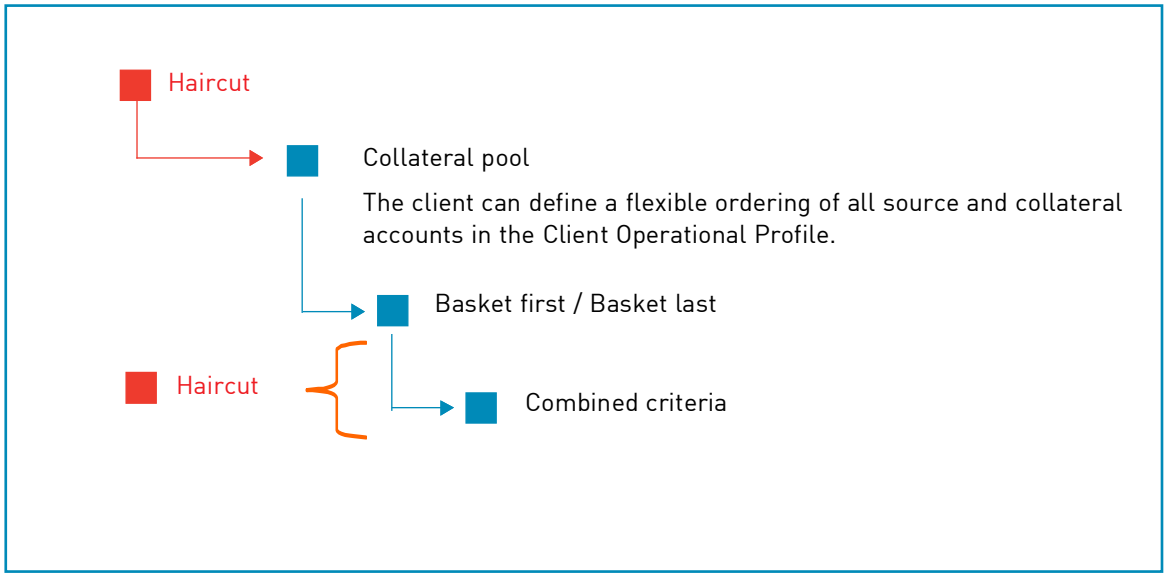


Figure 4-9. AutoAssign customised collateral allocation order

The combined criteria are at the core of the customised allocation order and can consist of any combination of the parameters listed in Figure 4-10 below.

Collateral Givers opting to customise the AutoAssign allocation ordering can also indicate if the External Sourcing from their account(s) with CEU has been enabled and the same asset is held in a source account with CBL and in a source account with CEU, which of both locations should be prioritised. It is therefore possible to indicate if in this situation the securities already in CBL's settlement system should be allocated first, last or to set no preference.

Instrument category	Instrument group	Issuer type	Min. rating	Max. rating	Baskets	Indices	Countries
Bonds	Bill	Sovereign	AAA	AAA	CBCORP	AEX	Argentina
	Certificate of deposit	Agency	AA+	AA+	CBEQUITY	ATX Prime	Australia
	Commercial paper	Structured	AA	AA	CBGOV1	BEL 20	Austria
	Convertible bond	Corporate	AA-	AA-	CBGOV2	CAC 40	Belgium
	MTN		A+	A+	ECB-EAD	DAX	Canada
	STN		A	A	ECB-BCL	Dow Jones Industrial	Denmark
	Straight bond		A-	A-	ECB-CBL	Euronext 100	France
Equities	Ordinary share		BBB+	BBB+	EGCP	FTSE 100	Indonesia
	Preferred share		BBB	BBB	EGCPX	FTSE MIB	Japan
	Convertible share		BBB-	BBB-	FEDXCY	IBEX 35	⋮
	Preferred convertible share		BB+	BB+	FEDUSD	⋮	New Zealand
	Depository receipt		BB	BB		MDAX	Portugal
	Right		BB-	BB-		NASDAQ 100	Russia
	Warrant		B+	B+		Nikkei 225	Spain
Investment funds	Balanced funds		B	B		OMX Stockholm	Sweden
	Money Market funds		B-	B-		PSI 20	Switzerland
	Equity funds		CCC	CCC		S&P ASX 20	Thailand
	Bond funds		CC	CC		S&P 500	United Kingdom
	Other funds		C	C		Straights Times	U.S.A.
			D	D		SMI	
			NR	NR		TOPIX Core 30	

Figure 4-10. Combined criteria for customised collateral allocation

Figure 4-11 shows an example of possible combined criteria configurations:

Rank	Instrument category	Instrument group	Issuer type	Max. rating	Baskets	Indices	Countries
1		Convertible bonds		BBB+			
2		Preferred convertible shares					
3		Depository receipts					Argentina
4		Depository receipts					Venezuela
5	Equities					Euronext 100	
6	Equities					S&P 100	
7	Equities				CBEQUITY		
8	Bonds		Agency				
9	Bonds		Sovereign				

Figure 4-11. Example of combined criteria configuration

In this example, AutoAssign will start by allocating all eligible convertible bonds from the collateral pool and proceed by allocating securities that meet the specified criteria in ascending ranking order.

Customised withdrawal order

When withdrawing collateral back to the Collateral Giver's account of origin, AutoAssign applies the reverse ordering, so as to ensure that the participant's priority ranking is respected. The withdrawal sequence is illustrated in Figure 4-12 below.

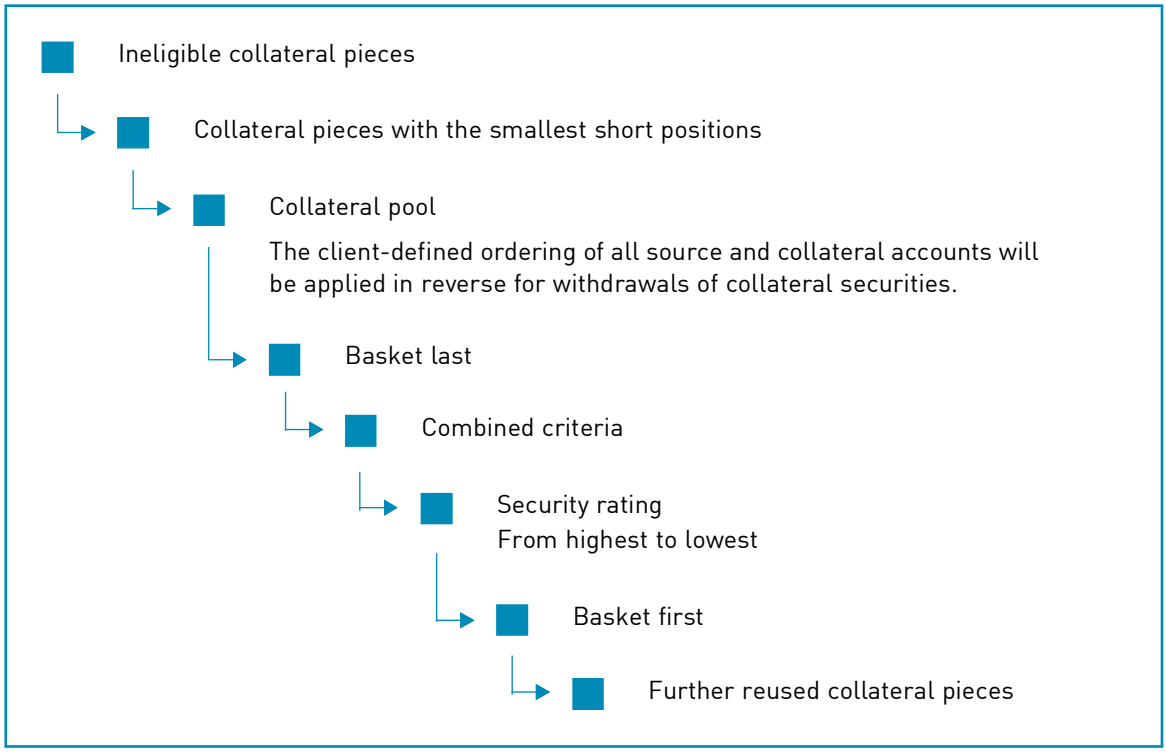


Figure 4-12. AutoAssign customised collateral withdrawal order

Note: Customised ordering is applied in cases of trade initiations, exposure adjustments, margin calls, substitutions and collateral withdrawals. When processing a collateral swap, AutoAssign overlooks customised ordering to ensure full coverage of a maximum of triparty exposures. If the client has enabled the External Sourcing from their account(s) with CEU the same asset can be allocated by AutoAssign from a source account with CBL and in a source account with CEU. In this situation AutoAssign will, depending on the choice of the client, either withdraw the position allocated from a source account with CBL or the position allocated from a source account with CEU.

Manual collateral selection mode

Collateral Pool

In the GCMSA, Collateral Givers can specify which account(s) form part of their eligible collateral pool for allocation in triparty. Securities marked for pending delivery eligible for settlement or for receipt instructions with status "on hold" will not be considered as available collateral.

Receipt and delivery instructions that are "linked" to one or more other instructions will only be taken into account after the successful settlement of all linked instructions.

Characteristics

- The Collateral Giver notifies Clearstream of the securities to be allocated to/withdrawn from the collateral account.
- After successful completion of the eligibility and sufficiency check, the instructions are generated automatically.
- Substitutions, withdrawals and margin excess/deficit adjustments[1] are performed upon request from the Collateral Giver.

1. The Collateral Giver will be made aware of any margin deficit via the daily exposure report and will be required, in accordance with the stipulations of the GCMSA, to post additional collateral to fully cover the exposure.

Note: If the Collateral Giver wants to source securities from a Euroclear account:

- The Collateral Giver notifies CBL of the securities to be allocated/withdrawn for all operations during the life cycle of the transaction.
- For each operation, CBL sends the Collateral Giver details of the instructions that must be entered into the Euroclear system for matching, in accordance with the published deadlines.

5. Transaction life cycle

Throughout the life cycle of a transaction, Clearstream will receive matching trade notifications from both counterparties[1]; validate the instructions; check collateral eligibility; generate against payment or free of payment settlement instructions; perform a daily mark-to-market of collateral (and loan) securities; process margin calls and substitutions and generate relevant reporting.



Figure 5-1. Transaction life cycle

Processing can take place during the daylight or overnight processing windows, depending on the execution date and the time of receipt and matching of the message. For the appropriate deadlines, please refer to Appendix A.

For details on the available communication channels and examples of all notification types, please refer to the CmaX Connectivity Guide, available on the Clearstream website.

Loan/exposure initiation

The Collateral Receiver and the Collateral Giver send CBL a notification of the new triparty exposure.

Triparty Repo Service (TRS)

The delivery against payment (DVP) movements of securities and cash are submitted for the requested value date. The securities are delivered to the collateral account and the cash is delivered simultaneously to the Collateral Giver's account.

See Figure 5-2 overleaf.

Cleared Repo Service (GC Pooling)

The exposure adjustments per basket are sent by Eurex Clearing for every respective value date. CmaX generates the delivery against payment (DVP) movements of securities and cash which are sent to the respective settlement location (Creation or T2S). The securities are delivered to the collateral account and the cash is delivered simultaneously to the Collateral Giver's account.

See Figure 5-5 overleaf.

Triparty Securities Lending Service 1 (TSLS1)

Loan securities are transferred against a cash amount equal to the value of the loan from the Collateral Receiver's account to the Collateral Giver's account. The collateral securities are transferred to the collateral account against an equal amount of cash. The resulting cash position is transferred from the Collateral Receiver's account to the collateral account in favour of the Collateral Giver.

See Figure 5-3 overleaf.

1. If both counterparties agree to a unilateral instruction setup, they are requested to sign a dedicated power of attorney (POA) authorising Clearstream to process specific types of instructions on the basis of unilateral notifications from one of the two parties.

Triparty Securities Lending Service 2 (TSLS2 and TCMS))

The delivery instructions to transfer the collateral from the Collateral Giver to the collateral account are submitted for the requested value date.

See Figure 5-4 on page 5-47.

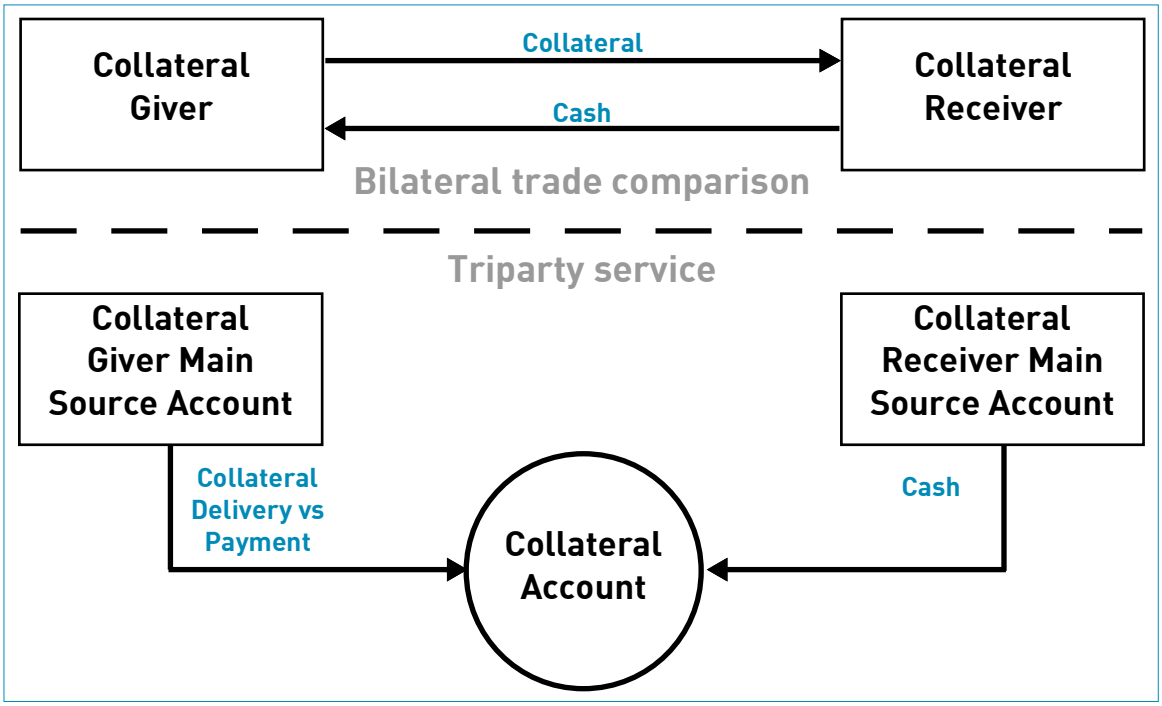


Figure 5-2. Loan/exposure initiation for TRS

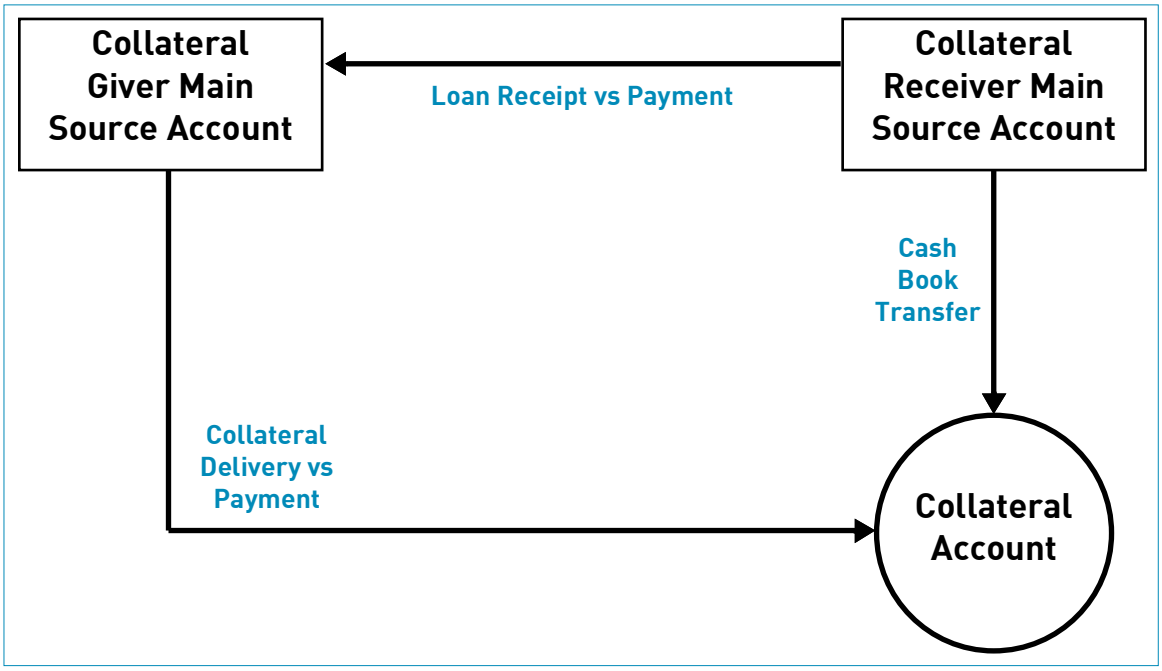


Figure 5-3. Loan/exposure initiation for TSLS1

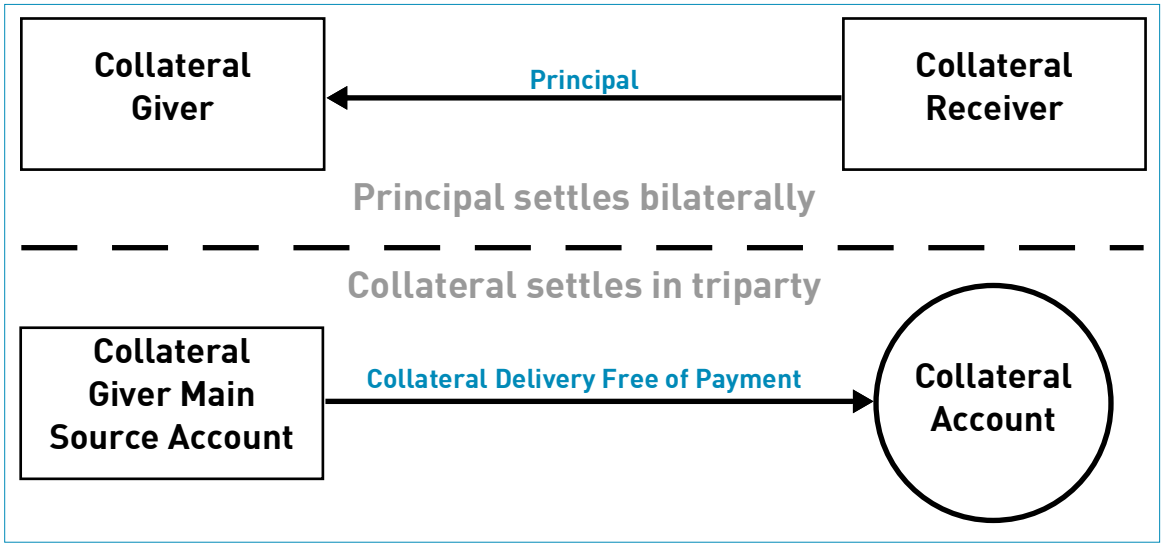


Figure 5-4. Loan/exposure initiation for TSLS2 and TCMS

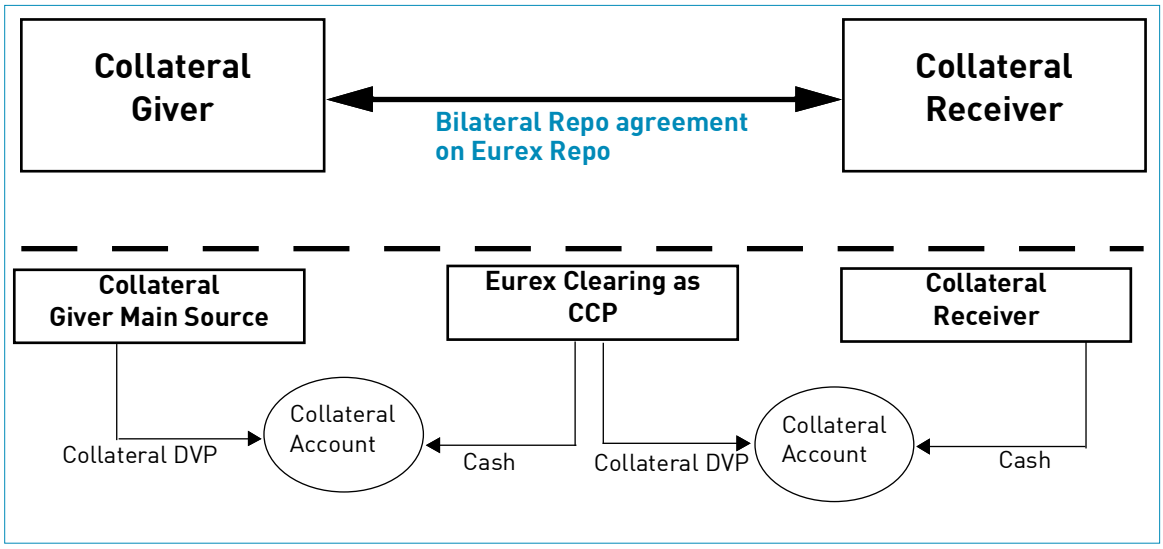


Figure 5-5. Loan/exposure initiation / opening for GC Pooling Repos

Margin calls

Note: The Collateral Receiver can define a margin excess/deficit tolerance level per contract, which AutoAssign will take into account when triggering margin calls. The tolerance level will apply individually to each transaction linked to that contract.

Margin deficit

If the net value of the securities held in a collateral account falls below the total loan/exposure value of all outstanding transactions between the same counterparties plus the appropriate margin, a securities top-up will be initiated.

- For Collateral Givers using AutoAssign, sufficient eligible securities are automatically selected from the Collateral Giver's account.

- Collateral Givers that have opted for manual mode processing must send a margin call notification, notifying Clearstream of the specific securities to be pledged as top-up collateral.

The free of payment movements of securities are submitted for the requested value date.

A margin deficit can be identified in the daily triparty collateral management reports sent by CBL to both Collateral Receivers and Collateral Givers.

The top-up process is outlined below:



Figure 5-6. Margin deficit adjustment process

Margin excess

The Collateral Giver may initiate a securities withdrawal if the net value of securities held in the collateral account is in excess of the netted loan/exposure value plus the required margin.

- For Collateral Givers using AutoAssign, excess securities are automatically withdrawn from the collateral account and returned to the Collateral Giver's account.
- Collateral Givers that have opted for manual mode processing must send a withdrawal notification to the Collateral Management Desk to request the withdrawal.

  A securities withdrawal request will only be executed if the Collateral Management Desk determines that such a withdrawal will not incur a margin deficit.

The free of payment movements of securities are submitted for the requested value date.

A margin excess can be identified in the daily triparty collateral management reports sent by CBL to both Collateral Receivers and Collateral Givers.

The withdrawal process is outlined below:



Figure 5-7. Margin excess adjustment process

Substitutions

At any time during the life of a transaction, within the applicable deadlines, Collateral Givers may substitute the securities held in a collateral account with other eligible securities.

- For Collateral Givers using AutoAssign, sufficient eligible securities are automatically substituted between the collateral account and the Collateral Giver's account, provided that the Collateral Giver holds sufficient replacement securities in his source account(s).

  AutoAssign detects any pending delivery instructions on the Collateral Giver's source account(s), as well as any borrowed positions (via CBL's Automatic Securities Lending Programme) and, if the securities are held in collateral accounts, substitutions will be triggered automatically.
- Collateral Givers that have opted for manual mode processing must send a substitution notification to the Collateral Management Desk to request the substitution and propose new, replacement collateral.

Substitutions are processed differently depending on the product type:

- Securities Lending and Borrowing use the Conditional Free of Payment process.
- GC Pooling uses a combination of Conditional Free of Payment process between the Collateral Giver and Eurex Clearing as CCP and Unconditional Free of Payment process between Eurex Clearing as CCP and the Collateral Receiver.
- For all other products we apply a delivery versus payment process by default; optionally clients can opt for Conditional Free of Payment substitutions via matching elections in the Appendix A.

The DvP substitution process is outlined in Figure 5-8 below.

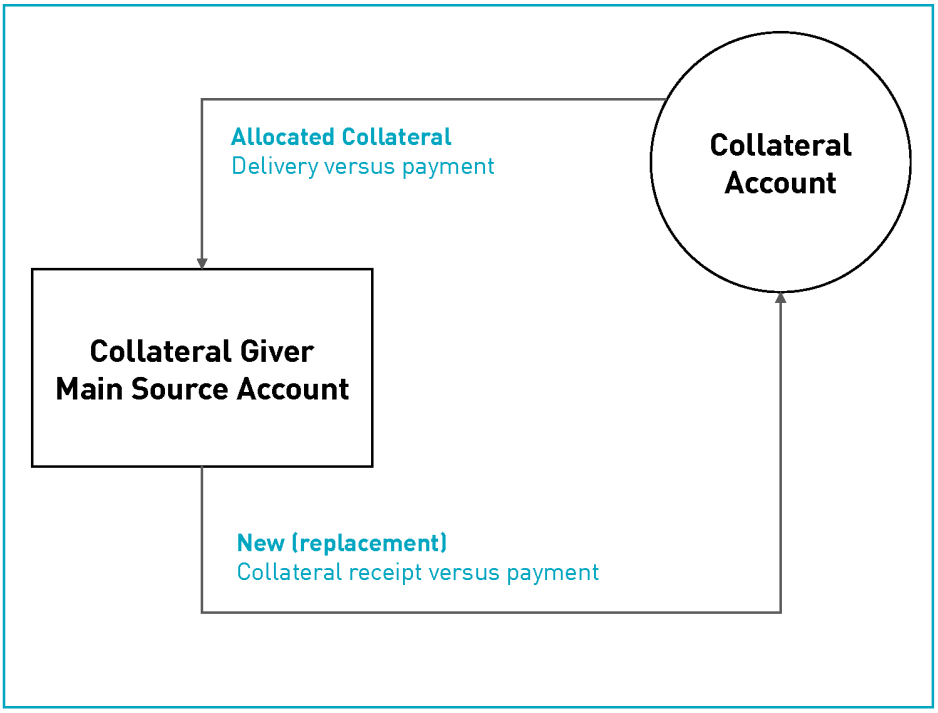


Figure 5-8. Delivery versus Payment substitution process

The Conditional Free of Payment substitution process is outlined in Figure 5-9 below.

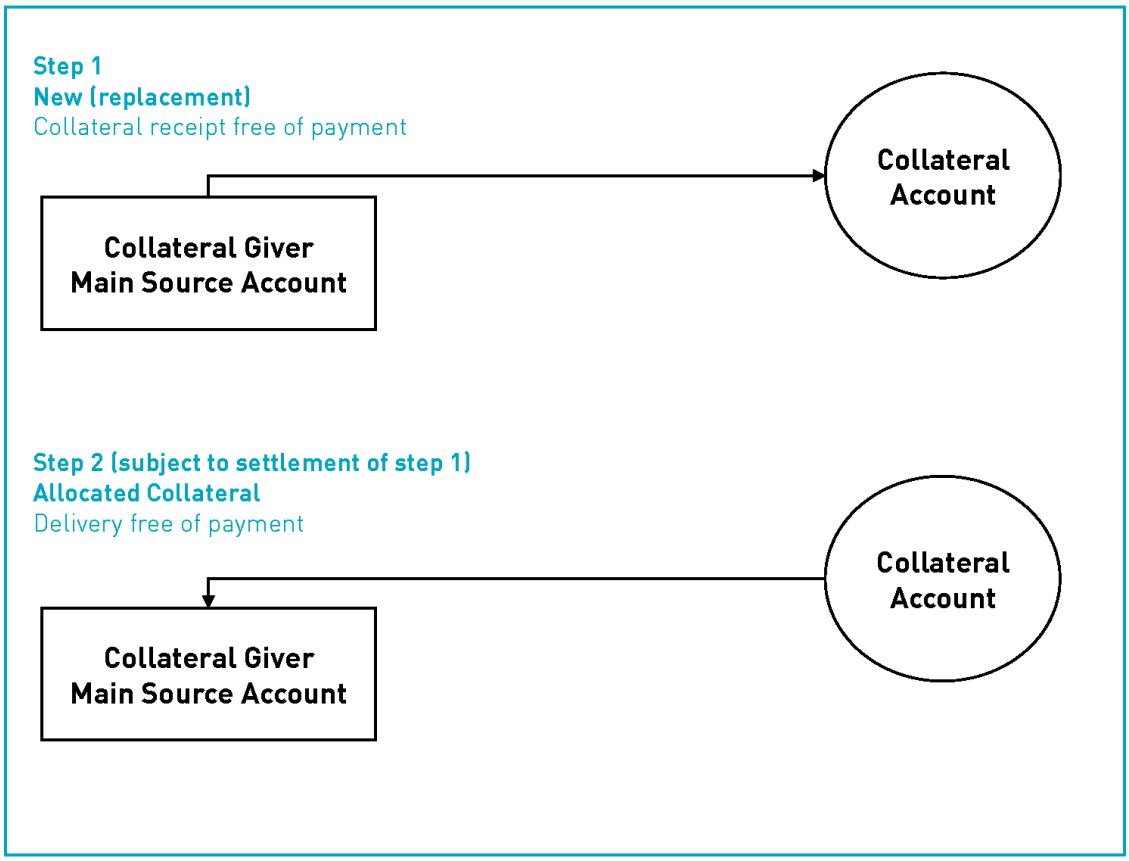


Figure 5-9. Conditional Free of Payment substitution process

The Unconditional Free of Payment substitution process is outlined in Figure 5-10 below.

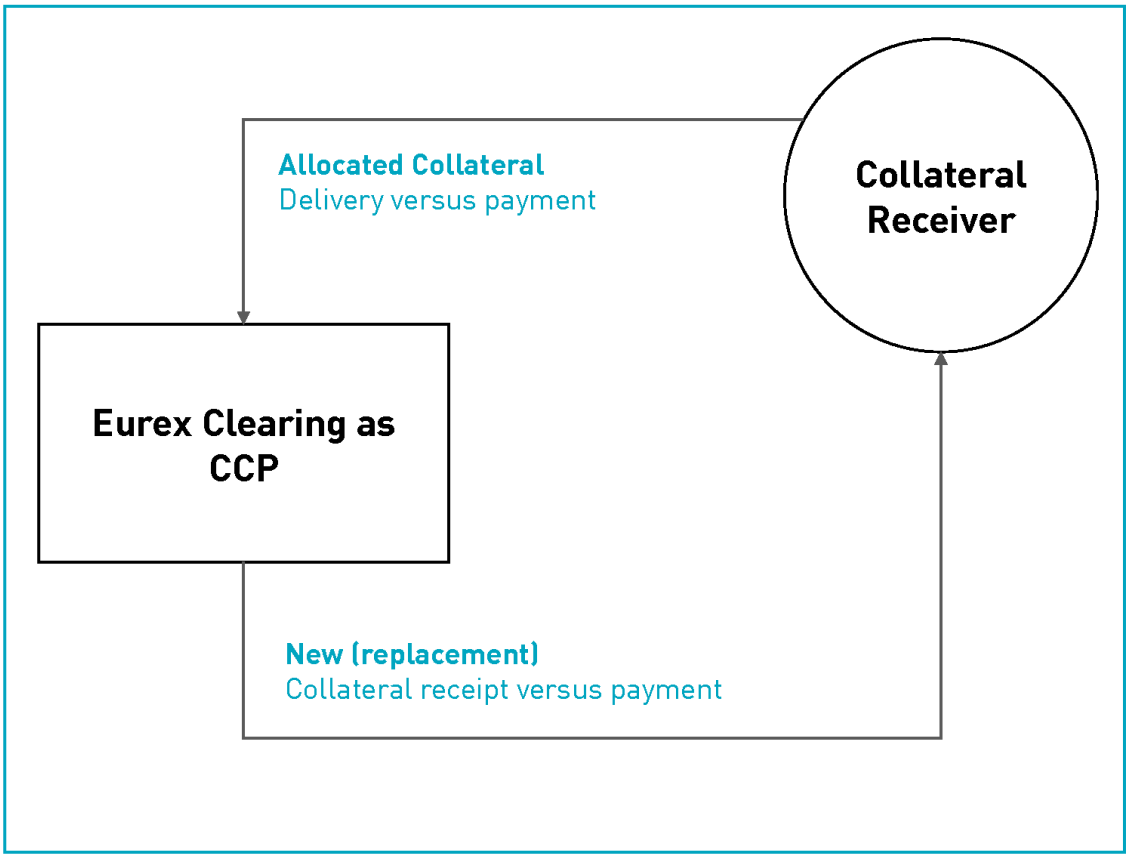


Figure 5-10. Unconditional Free of Payment substitution process

Adjusting the terms of the trade

During the life of a triparty transaction, both counterparties may agree to modify the terms of the trade. Upon receipt of matching notifications, Clearstream will process the requested changes with good value.

Changes can be processed to amend the following parameters:

- Exposure adjustment;
- Pricing rate (Repo);
- Fee change (TSLS1);
- Closing date;
- Closing amount.

Note: Pricing rate and Fee changes can be initiated up to two business days before the transaction is due to mature.

Loan/exposure termination

Both counterparties advise CBL of the maturity date of the transaction either at initiation or, for open loan/exposures, during the lifecycle of the trade by sending CBL a matching Set Close Date notification.

The Set Close Date notification can be sent up until, and including, the planned maturity date, in accordance with the relevant market deadline.

Triparty Repo Service (TRS)

The securities are delivered back to the Collateral Giver's account and the cash proceeds, including the exposure interest, are simultaneously transferred to the Collateral Receiver's collateral account. The cash is then transferred by CBL either to the Collateral Receiver's account in CBL or to the Collateral Receiver's CCB (see "Cash management options for Collateral Receivers" on page 4–34).

The loan/exposure termination process for TRS is outlined in Figure 5-11 below.

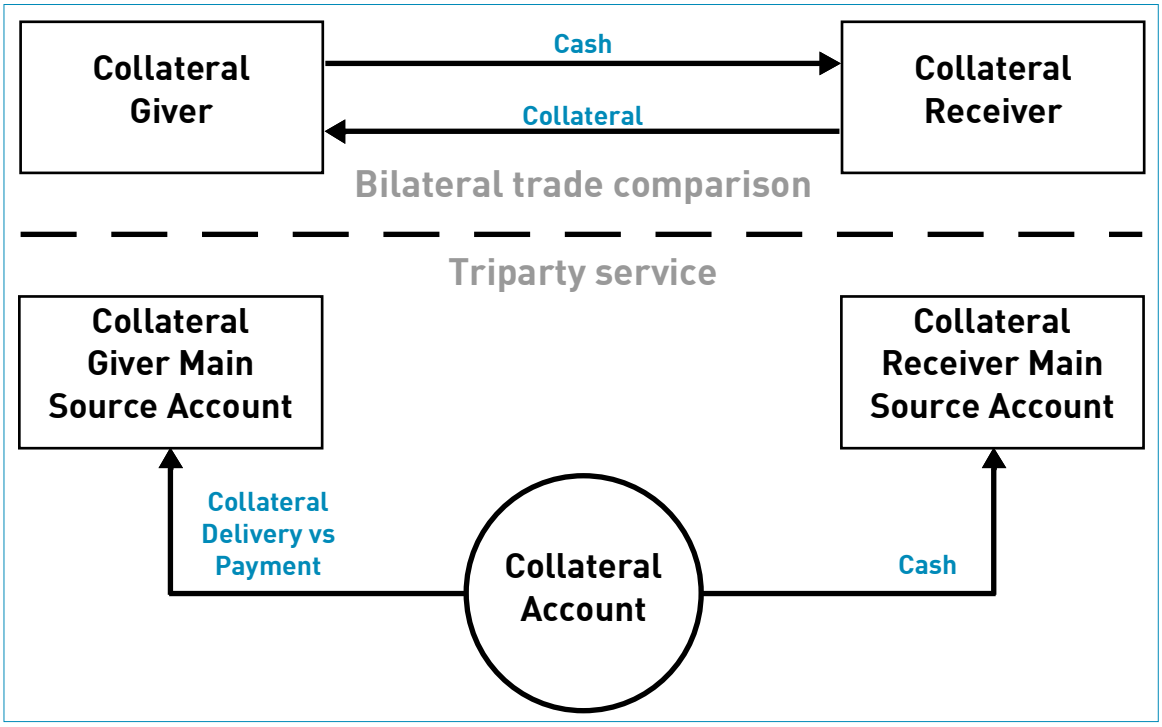


Figure 5-11. Loan/exposure termination for TRS

Cleared Repo service - GC Pooling

The same process like for opening (see Loan/Exposure initiation) applies for claim reductions to zero.

The exposures stay open and will not be closed for GC Pooling.

Triparty Securities Lending Service 1 (TSLS1)

The movements of securities against cash are generated for the Mandatory Settlement Period of the requested value date. The loan securities are delivered back to the Collateral Receiver's (Lender's) account and the collateral securities are transferred to the Collateral Giver's (Borrower's) account.

The loan/exposure termination process for TSLS1 is outlined in Figure 5-12 below.

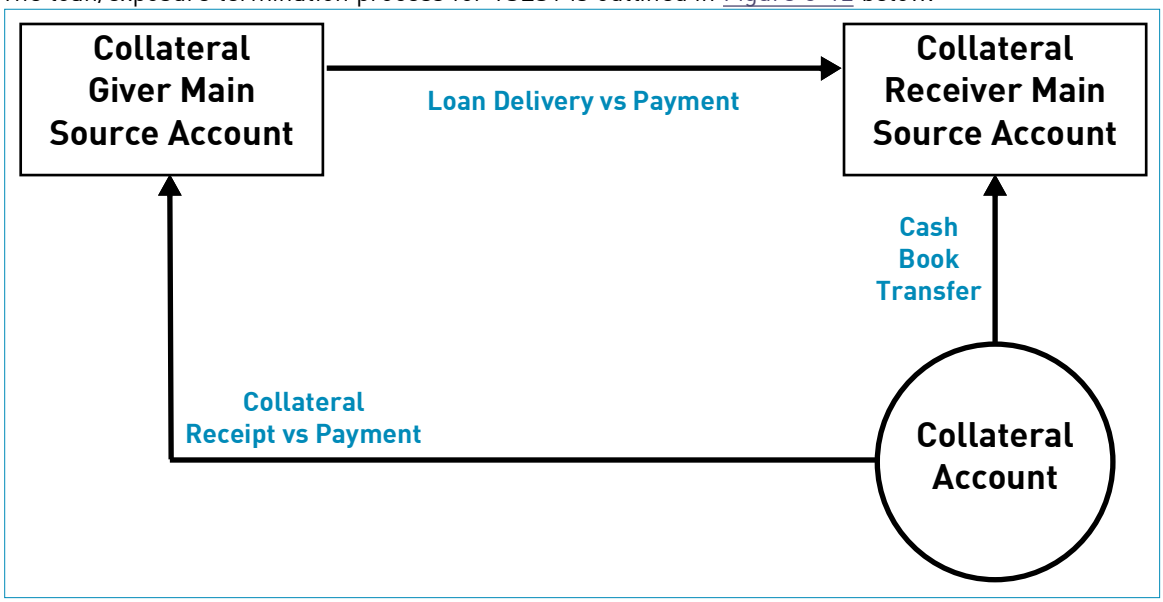


Figure 5-12. Loan/exposure termination for TSLS1

Triparty Securities Lending Service 2 (TSLS2) and Triparty Collateral Management Service (TCMS)

The collateral is transferred free of payment from the collateral account to the Collateral Giver's Account and the principal settles outside the framework of triparty. It is the responsibility of the counterparties to time their instructions so that the collateral is reversed to the Collateral Giver only once the principal has fully settled.

The loan/exposure termination process for TSLS2 and TCMS is outlined in Figure 5-13 below.

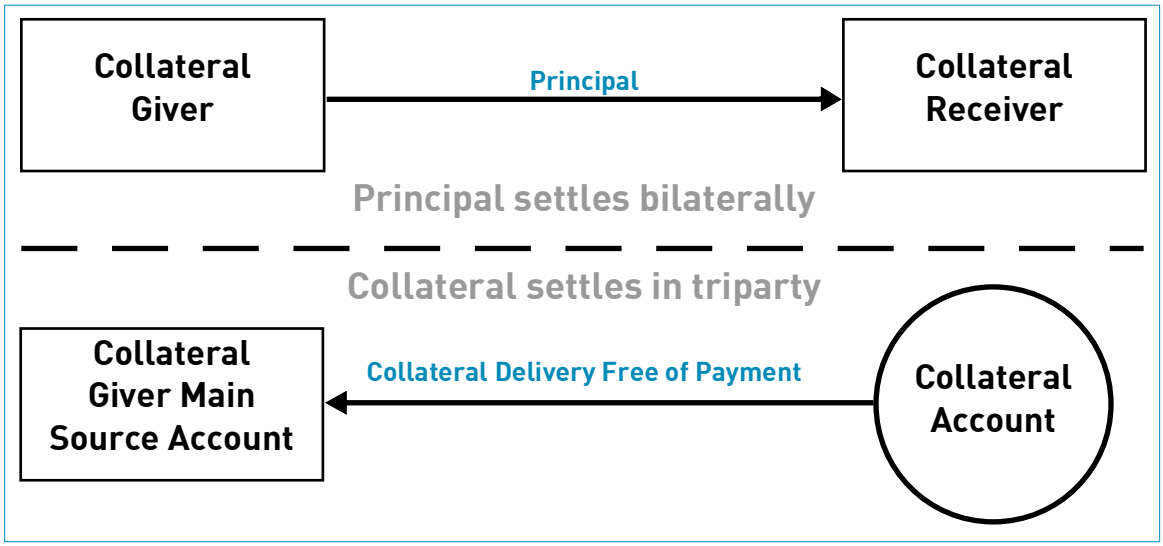


Figure 5-13. Loan/exposure termination for TSLS2 and TCMS

Partial openings

If a transaction fails to settle fully for the specified value date, CBL will notify both the Collateral Receiver and the Collateral Giver.

In a DVP transaction, the Collateral Receiver will only deliver the cash countervalue of the collateral securities actually received. Any residual cash will remain on the Collateral Receiver's account, until sufficient collateral is delivered, thus ensuring that the Collateral Receiver is fully covered throughout the trade. Similarly, if the partial settlement is due to a shortage of funds on the Collateral Receiver's side, the Collateral Giver will be long in securities until the trade can be fully covered.

In AutoAssign mode, should a trade fail to settle fully upon initiation, the system will continue to attempt to collateralise the remaining exposure in every subsequent run, up until the close of the trade.

Similarly, in manual mode, provided that the conditions for full settlement are met (either sufficient eligible collateral becomes available and is pledged through a new instruction by the Collateral Giver or, in the case of DVP trades, sufficient cash is credited to the collateral account by the Collateral Receiver), the trade can be fully settled during the interval between trade initiation and close.

In the case of DVP transactions, the Collateral Giver will return the cash principal, with any interest due, on termination date, regardless of whether the trade was fully collateralised throughout its life cycle.

Cash as collateral

In the event of insufficient eligible securities to fully collateralise a triparty collateral management exposure, the Collateral Receiver will have a positive cash balance on his collateral account, as detailed in the section above.

In the event of a margin deficit following a mark-to-market process, should the Collateral Giver not have sufficient eligible top-up securities, Clearstream allows the option of allocating cash as collateral to cover the exposure. This process is handled manually (for AutoAssign contracts) in order to ensure that it is only used as a last-resort measure and to enable clients to easily opt-out if their business model so requires.

Cash may also be used as replacement collateral for substitution purposes where a substitution instruction, whether submitted directly by the Collateral Giver or through a third-party optimisation provider acting on its behalf, would otherwise result in a collateral deficit on the relevant collateral contract. In accordance with the GCMSA, Cash is an Eligible Asset for such substitutions and may be allocated to cover the resulting deficit in order to complete the substitution.

Cash as collateral is recognised as a temporary measure, in order to ensure that the Collateral Receiver is not exposed during the trade life-cycle. However, it is recommended that temporary cash held on a collateral account intraday be substituted out by the close of business. Overnight cash balances will only be reinvested on a best effort basis and there is no guarantee that interest will be paid.

Collateral Receivers do not have the option of withdrawing cash from their collateral account during the life of the trade in order to invest it on their own initiative. Under the collateral management agreement, cash must remain within the triparty environment and can therefore only be invested by Clearstream on the participant's behalf.

Note: Cash as collateral applies to triparty trades managed by CBL's collateral management engine (CmaX). It cannot be used to collateralise GCP trades or exposures with the Deutsche Bundesbank. Note also that reuse of cash is not possible.

Extended Matching Period

To support the same day matching of collateral management instructions where Collateral Receiver and Collateral Giver are within different time zones, an extended matching period for collateral management instructions under TCMS service is introduced, at contract level.

Collateral Givers and Collateral Receivers, selecting the use of extended matching period at contract level, have the possibility of instructing and matching their instructions until 23:30 (CET) subject to certain conditions. Extended matching functionality is only permitted to a subset of transaction lifecycle events: initiation (new exposure) and change of principal (increase or decrease).

If either counterparty to the contract sends a same day settlement instruction that matches after Clearstream change of business day (COD), the matching will take place with next day value. Instructions received after Clearstream COD will only be recycled once. This functionality will only be available to STP notifications that is instructions received via Swift (MT527 format) or Xact Web Portal. Notifications received via other communication channels and subject to manual processing, for extended matching purposes, will not be supported.

Principal Matching Tolerance

Clients have the choice of defining a matching tolerance at contract level, as either a fixed amount and currency or percentage, which is applicable during matching of principal amount. Principal tolerance matching is only applicable to Triparty Collateral Management Services (TCMS) and for the following exposure notification types: initiation (new exposure) and change of principal (increase or decrease).

Matching of principal based on tolerance matching takes place on the lowest undisputed amount (of the two principal amount instructed by both participants), if both requested principal amounts are within the principal amount of matching tolerance defined at contract level.

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6. Collateral reuse

Clearstream's innovative, cross-product collateral reuse functionality enables Collateral Receivers to maximise trading opportunities by reallocating collateral received in triparty transactions to collateralise other triparty exposures where they act as Collateral Giver.

Collateral Receivers that reuse collateral in AutoAssign mode will benefit from all existing advantages offered by the collateral agent (for example, unlimited right of substitution, automatic recalls for settlement or taxable corporate actions).

Collateral Givers using manual selection of collateral also have access to unlimited collateral reuse and will retain responsibility for the securities selection across all operations (initiation, adjustment of exposure, deficit adjustment, substitution etc).

Benefits and key features

Cross-product collateral reuse enables clients to reuse any collateral received in triparty transactions across the different triparty collateral products:

- Triparty Repo Service (TRS)
- Triparty Securities Lending Services (TSLS)
- Triparty Collateral Management Service (TCMS)
- Euro General Collateral (GC) services
- Collateral Pledge to Central Banks

While retaining the full benefits of the traditional triparty structure, reuse lifts liquidity constraints and maximises trading opportunities within a secure environment.

Reuse structures can be tailored to cater for specific client needs. For further details, please contact your Global Securities Financing specialist.

An illustration

As Collateral Receiver in Figure 6-1 overleaf, you have entered into triparty trades with Collateral Givers A, B and C and, as a result, have received collateral that may be the proprietary assets of your counterparties or assets that they in turn have received through other triparty trades. When acting as Collateral Giver in future trades with participants D, E and F, you can opt to pledge your proprietary assets as collateral or to onward pledge the assets received from participants A, B and C, thereby maximising your trading possibilities.

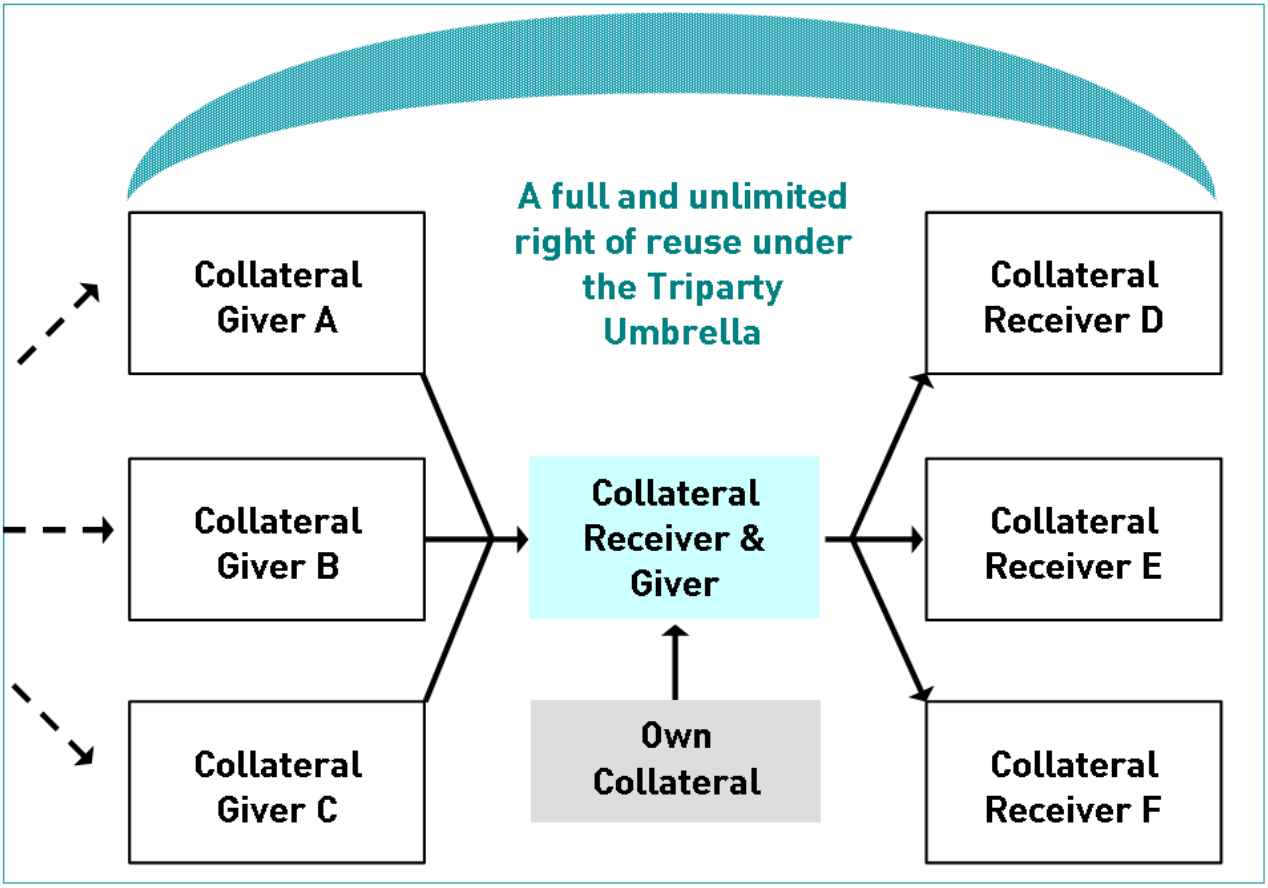


Figure 6-1. Collateral reuse

Note: Collateral reuse is an option for Collateral Givers and must be specifically requested via the Client Operational Profile.

Account structure options in a reuse environment

Collateral Givers that have subscribed to AutoAssign can define and prioritise collateral accounts available for reuse as collateral source accounts to collateralise different exposure types automatically. For this setup it is required to define a new account as a central account, following the example above. Through this configuration, the client will have the option to either give the same priority to all source accounts or to give a (specific) priority to the source accounts.

If the same priority is given to (all) accounts, AutoAssign will select the collateral across the different accounts. If different priorities have been defined by the client, AutoAssign will first select the collateral from source accounts with priority 1 after which collateral will be selected with priority 2 followed by priority 3 etc.

Reuse of collateral to pledge to underlying clients

Lending desks or any Collateral Receivers who are looking for a sound legal structure and easy setup to allocate received collateral in return for loan securities or any other exposure can also benefit from the reuse functionality offered by CBL.

As illustrated in Figure 6-2, Collateral Receivers that require allocation of collateral to underlying clients can do so by opening segregated collateral accounts in their own names, on which the assets are pledged free of payment to their underlying clients.

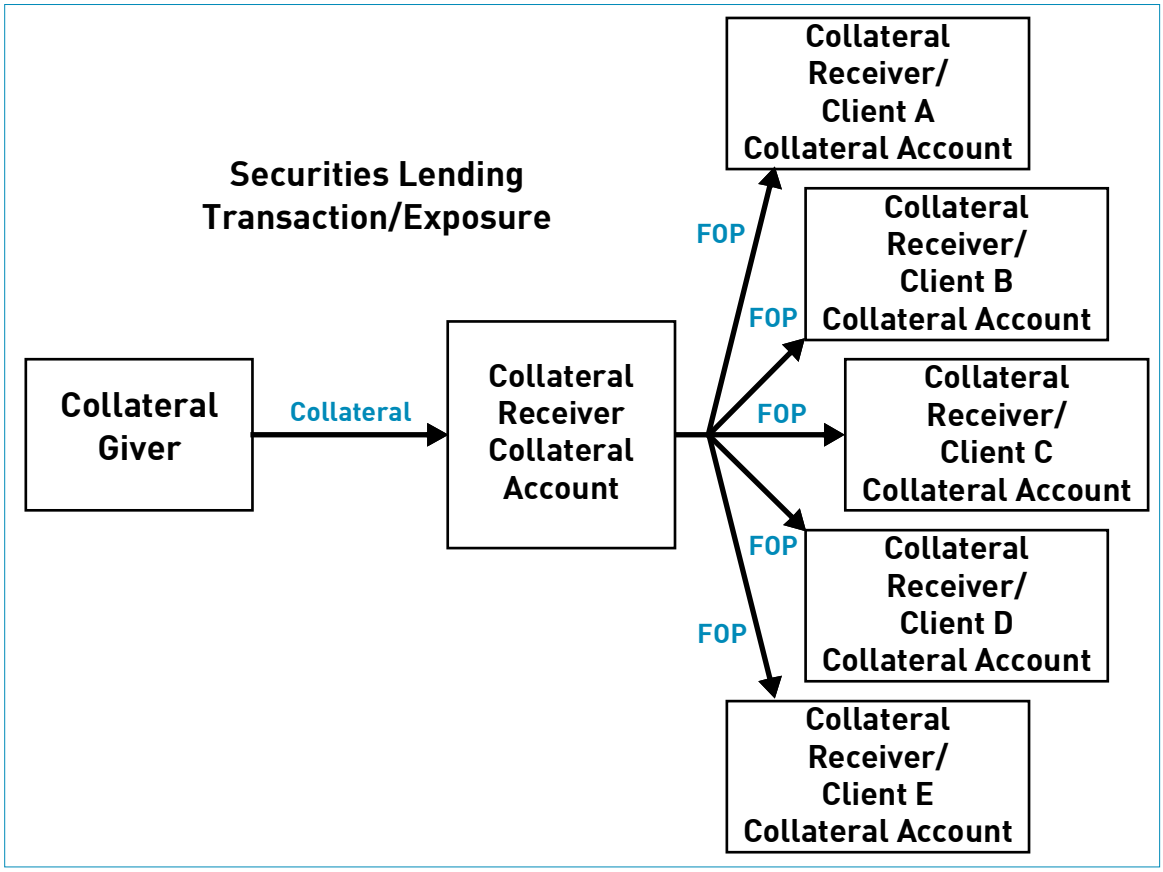


Figure 6-2. Collateral reuse - Pledge to underlying clients

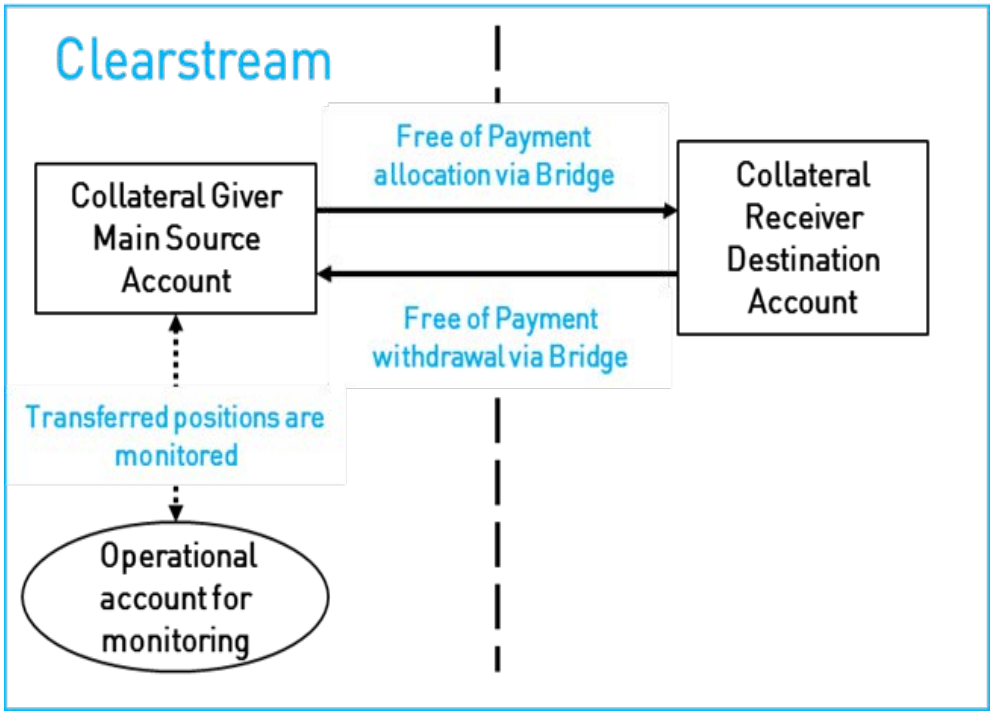
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7. Fully Automated Collateral Transfer (FACT) to an External Depository

The Fully Automated Collateral Transfer service offered by CBL is designed to simply the transfer, and its return, of collateral from a Collateral Giver to a dedicated destination account in Euroclear; belonging to the same legal entity as the Collateral Giver.

To participate in this additional service Collateral Givers, must:

- Sign the Appendix G to the GCMSA;



- Grant Clearstream a Power of Attorney for Swift for the destination account in the external depository.

Collateral is delivered from the Collateral Giver's account, free of payment, directly to the destination account in Euroclear; owned by same legal entity. Transferred collateral will be monitored and reported in accordance with Appendix G to the GCMSA.

The collateral giver must communicate, unilaterally, any change in the value of the principal.

Fully Automated Collateral Transfer (FACT) to an External Depository

Operational Procedures

Purpose

The FACT service allows collateral Givers to automatically transfer collateral from their account in Clearstream to an account in Euroclear:

- The quality of collateral being defined within a collateral basket.
- The collateral value being managed by changing the principal value up or down.

When the collateral is no longer required it will then be automatically transferred back to the Collateral Giver account in Clearstream.

Clearstream has simplified the process by reusing its existing familiar collateral management environment.

Documentation

To take advantage of the FACT service collateral management clients should:

- Nominate a Destination Account in the external depository;
- Sign the Appendix G to the (already signed) GCMSA;
- Grant Clearstream (CEDELULLXXX) Power of Attorney to send Swift messages to the destination account.
- Send a signed Appendix A - Collateral Giver, for each collateral basket.

Clearstream

Clearstream will create an operational account within the collateral management system. This account cannot receive cash or collateral. This account is referenced, by the client, when:

- Defining the collateral basket; eligibility, haircuts and concentration limits. More than one basket can be created, provided the basket references are unique.
- Sending the collateral management instructions to manage the principal.

After receiving a signed Appendix A - Collateral Giver a contract, sub type "Transfer", will be set up using the operational account. The counterparty to the contract being from the same legal entity as the Collateral Giver.

Client

When creating the Appendix A, it should be noted that for this service there is a mandatory margin tolerance of +/- 2%. This is to reduce the number of settlement instructions. Additionally, a minimum transferable value can be defined, this is for allocations only.

After Clearstream has set up the contract with the signed collateral basket the Collateral Giver should then instruct, unilaterally, to open the first open ended exposure in the currency for which the collateral value should be calculated. More than one exposure can be opened on each contract provided the principal currency is different.

Once an exposure has been opened, it should be managed by change principal exposure up, or down, instructions. If an exposure is to be closed, a change principal down to zero should be sent, prior to the set close date.

Collateral Life Cycle

When an exposure is opened by the Collateral Giver, collateral is automatically selected, using the criteria defined within the basket, and sent directly from the Collateral Giver source account to the

Destination Account. Matching free of payment collateral management instructions are generated to transfer the collateral across the Clearstream/Euroclear bridge:

- One being sent internally;
- One being sent by Swift to Euroclear.

These instructions are 'mirrored' on the Operational Account and updated when settlement feedback is received.

Transferred collateral is monitored for:

- Margin calls - Collateral value falls below or above the deficit margin tolerance.
- Short positions - A sell on the Collateral Givers source account.
- Corporate actions - There is an upcoming record date.
- Ineligibility - A security characteristic changes.

For margin calls, a free of payment allocation or withdrawal is made.

For other, events a free of payment substitution is made, consisting of an allocation and withdrawal with equal collateral values. Both instructions are sent at the same time, the provisioning of any withdrawal instruction is not the responsibility of Clearstream.

To reduce the collateral value of transferred collateral, a unilateral change principal down instruction is required, from the Collateral Giver. Once received, collateral management instructions will be sent to withdraw securities from the Destination Account directly to the Collateral Giver Source Account. Once again, the provisioning of any withdrawal instruction is not the responsibility of Clearstream.

Cancellation of Settlement Instructions and Principal Adjustment

Any collateral management instructions, pending settlement, are automatically cancelled 15 minutes before the bridge instruction deadline; currently, cancellation instructions are sent at 18:15. Once feedback has been received, the positions on the Operational Account are updated to match the confirmed positions transferred to the Destination Account.

Following the position update, if the Collateral Value of the transferred value is outside the margin tolerance of the Principal Value of the exposure, then the it is automatically adjusted up or down to match.

Corporate Actions

Contrary to the Product Guide, Clearstream will automatically try to substitute ALL transferred securities two business day prior to the record date of a corporate action event. If a transferred security is not withdrawn before the record date, the proceeds of the corporate action will be received in the external depository. In this case, Clearstream is not responsible for transferring proceeds to the original Collateral Giver.

Reporting

End of day reporting on the Operational Account will always reflect the securities confirmed as transferred to the Destination Account in the External Depository. All the Clearstream collateral management reports can be used for the FACT service.

8. Collateral eligibility, price selection process, valuation and ratings

Collateral eligibility

The eligibility profiles are part of Appendix A of the Collateral Management Service Agreement for Collateral Receivers, available on the Clearstream website.

Eligibility profiles

Eligibility profiles can consist of:

- Clearstream standardised baskets - set profiles representing a clearly defined level of risk, standardised across the triparty world (see Appendix D); or
- Customised eligibility profiles based on a range of criteria defined by Collateral Receivers in accordance with their risk tolerance levels. Clients can freely combine any number of available collateral criteria to create customised eligibility rules in the most flexible way. Customised eligibility profiles can be mixed (mulit-assets class) or bonds, equities, funds or digital assets.
- Clients can choose to combine different reference data fields that may be captured by Clearstream Banking using different data vendors to build up their eligibility profiles. Asset categorisation of selected reference fields is based solely on the published categorisation of the data vendors. Eligibility rules will be based on the categorisation applied to selected reference data fields.

Note: Clients can also set up eligibility profiles on the basis of lists of specific issuers, securities or groups of securities.

Bonds

Eligibility criteria for bonds include security type, issuer type, issuer country, rating and industry sector. These criteria can either be applied to all bonds or can be set up at issuer type level or, if applicable, at structured security type level.

- Issuer types are:

  Sovereign, Agency, Corporate, Structured, Convertible bonds.
- Structured security types are:

  Covered bonds, Asset-backed securities, Collateralised debt obligations, Credit-linked notes, Mortgage-backed securities

For a list of eligible markets, please refer to Appendix F.

Equities

Eligibility criteria for equities include security type, issue country, rating, industry sector, market capitalisation and market index.

For a list of eligible markets, please refer to Appendix F.

Investment funds

Eligibility criteria for funds include security type, country of domicile, geographical focus, open/closed-ended, UCITS/non-UCITS and NAV calculation frequency.

Crypto assets

Crypto currencies (ETH, BTC, SOL, XRP, AVAX, XLM, LTC, ADA) can be allocated as collateral within CmaX.

Eligibility criteria for crypto assets include ISIN, Common code and Security type (Digital).

Exposure

As well as the specific asset class criteria described above, clients can also define eligibility criteria based on exposure related parameters, including exposure currency, exposure duration or remaining duration and exposure opening/closing date.

Clients can also use business date and time to fine-tune collateral eligibility to a more granular level. For example, they can exclude a particular type of instrument during a certain time window every day, or can restrict/expand collateral eligibility during particular days or weeks.

Concentration limits

Clients can apply concentration limits to restrict the quantity (expressed in amount or percentage value) of a specific type of security in their portfolio and/or to diversify their holdings.

Calculation

Concentration limits are applied at contract level. A base amount is calculated for each transaction as the maximum between two values, as follows:

Max {Exposure amount; Collateral value of allocated collateral}

Each concentration limit will apply to the sum of the base amounts of all underlying transactions. When allocating collateral securities to cover an exposure, the system will ensure that their collateral value does not breach any of the concentration limits under the contract. Where there is an overlap between two concentration limits, the strictest limit will always prevail.

Example:

- 40% limit on U.S. bonds
- 20% limit on U.S. corporates
- 10% limit on BBB rated bonds

In this example, U.S. bonds can be allocated to cover up to 40% of the collateral requirements under a contract. Of this 40%, half can consist of U.S. corporate securities. Furthermore, U.S. corporates with a rating between BBB+ and BBB- will only be allocated up to 10% of the total exposure.

Flexible options

Concentration limits can be applied across a range of criteria either across asset classes, or for bonds, equities or funds only.

Concentration limits for bonds can be applied on criteria such as security type, issuer country, credit rating, outstanding amount, industry sector, time to maturity and price characteristics.

Concentration limits for equities can be applied on criteria such as security type, outstanding issue size, market capitalisation, average traded volume and market index.

Concentration limits for funds can be applied on criteria such as security type, geographical focus and outstanding issue size.

Haircuts

Haircuts are constructed on the basis of groups of rules which are applied incrementally. With respect to any single piece of eligible collateral, the haircut derived from each group of rules is added to the haircuts derived from all other groups in the collateral basket to derive the final applicable haircut.

Haircuts can be applied per asset class:

- Haircuts on bonds

  Haircuts on bonds can be applied as a function of, for example, issuer country, industry sector, credit rating, evaluated price and price quotation age.

  Haircuts can be applied to all bonds or can be set up at bond risk profile level. Bond risk profiles are:

  Sovereign, Agency, Corporate, Structured, Convertible.

- Haircuts on equities

  Haircuts on equities can be applied, for example, per eligible market index, currency, price volatility, price quotation age, market capitalisation and average traded volume.

  Haircuts can be applied to all equities or can be set up at the security type level. Security types are:

  Ordinary shares, Preferred shares, Preferred convertible shares, Depository receipts, Rights.

- Haircuts on investment funds

  Haircuts on funds can be applied, for example, per country of geographical focus, currency, market capitalisation, NAV frequency and NAV volatility brackets.

  Haircuts can be applied to all funds or can be set up at the security type level. Security types are:

  Balanced funds, Bond funds, Equity funds, Money market funds, Other funds.

It is possible to define, at contract level, whether haircuts should be calculated using the European or the U.S. margin calculation method.

Valuation corrective measures

If neither haircuts on price quotation age nor a price age ceiling is defined by the parties in their collateral eligibility criteria, Clearstream applies valuation corrective measures for any security whose price has not been updated within the last 30 business days.

The default additional haircuts[1] for ageing prices are as follows:

- Additional 10% margin for any sovereign or agency issuer;
- Additional 20% margin for any corporate or structured security.

1. These additional haircuts are applied to the most recent price received. Please refer to "Price source and type" on page 8–70.

Bond type	Over (# days)	Additional margin (%)	Ineligible after (# days)
All bonds			
Sovereign	30	10	
Supranational & Agency	30	10	
Corporate	30	20	
Structured	30	20	
Convertible			

Figure 8-1. Dynamic haircuts and price quotation age

Valuation method

Clients can choose between the European or U.S. valuation method for calculating the collateral value of a security. The two valuation methods are defined below:

- European valuation (default)

Bonds	Quantity *	$\frac{\text{(Market Price + Accrued Interest)}}{\text{(100 + Margin)}}$	*	Valuation Factor	
Equities	Quantity *	$\frac{\text{(Market Price)}}{\text{(100 + Margin)/100}}$			

- U.S. valuation (optional)[1]

Bonds	Quantity *	$\frac{\text{(Market Price + Accrued Interest)}}{100}$	*	$\frac{\text{(100 - Margin)}}{100}$	*	Valuation Factor
Equities	Quantity *	Market Price	*	$\frac{\text{(100 - Margin)}}{100}$		

Margined value:

The collateral value of the security expressed in the quotation currency of the security.

Accrued interest:

Clients can define, at contract level, whether clean or dirty prices should be used to value collateral.[2]

Valuation factor:

Either the pool factor or the index factor for valuation of the security.

Foreign Exchange rates:

Clearstream uses daily exchange rates obtained from recognised data providers to evaluate collateral securities and exposures across currencies.

1. The default valuation method for the collateral pledge service to the U.S. Federal Reserve and Initial Margin Segregation baskets.
2. Dirty price is used by default across triparty collateral management services. Clean price is the default option for the collateral pledge service to the U.S. Federal Reserve and to Eurex margining service.

Pricing selection process

Clearstream uses a sophisticated price selection model to value over 800,000 securities and to ensure that the most recent and accurate prices are applied. To this end, prices are weighted according to predetermined quality criteria, tolerance checks are applied and price age is monitored.

Note: This section describes the default pricing methodology that CBL applies to all collateral under management as neutral triparty agent.

For information on external valuation options, see "External valuation options" on page 8–73.

Price source and type

Securities prices are automatically collected, on a daily basis, from several recognised external information providers, such as Refinitiv, ICE Data and SIX Financial Information.

Prices of debt instruments and equities are automatically updated with the Refinitiv or ICE Data prices of the previous business day. If market prices are not available for bonds, Clearstream may use evaluated prices from external providers[1].

If, on a given date, no new price for a security is received from the above sources, Clearstream will maintain the most recent available price.

Price selection

As Clearstream uses multiple external pricing sources, it uses a complex and conservative selection algorithm to obtain the most appropriate available price to replace the previous one.

Prices are categorised as follows:

Price Type	This defines whether the price is closing (end of day), bid, mid or ask;
Price Category	This defines the origins of the price, for example, market, composite, evaluated etc.
Price Provider	This is the data provider who is sending the price.

Prices are weighted according to the above categories as well as by price value date. The weights are assigned as shown in Figure 8-2 below, in descending order of priority:

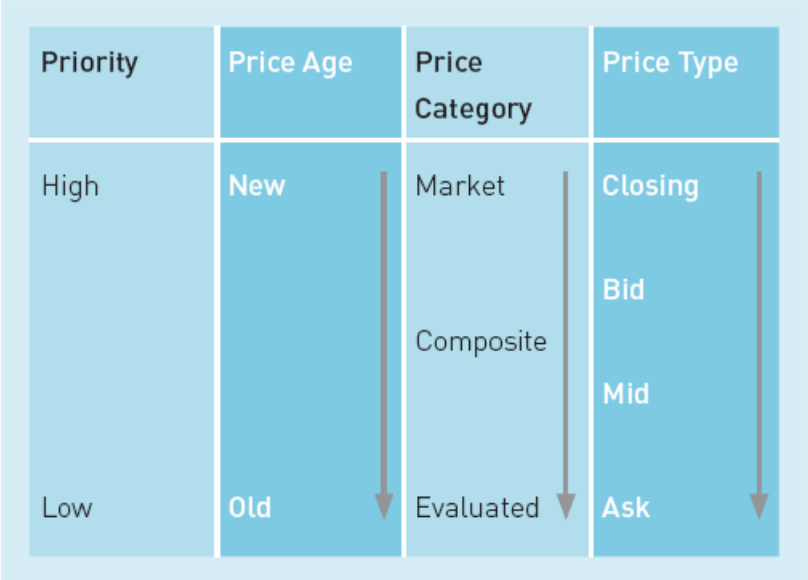


Figure 8-2. Price weighting

1. At contract level, clients can exclude or impose additional haircuts on securities with evaluated prices, depending on issuer type (sovereign, agency, corporate, structured and convertible bonds).

Figure 8-3 shows the price rankings per category and data provider.

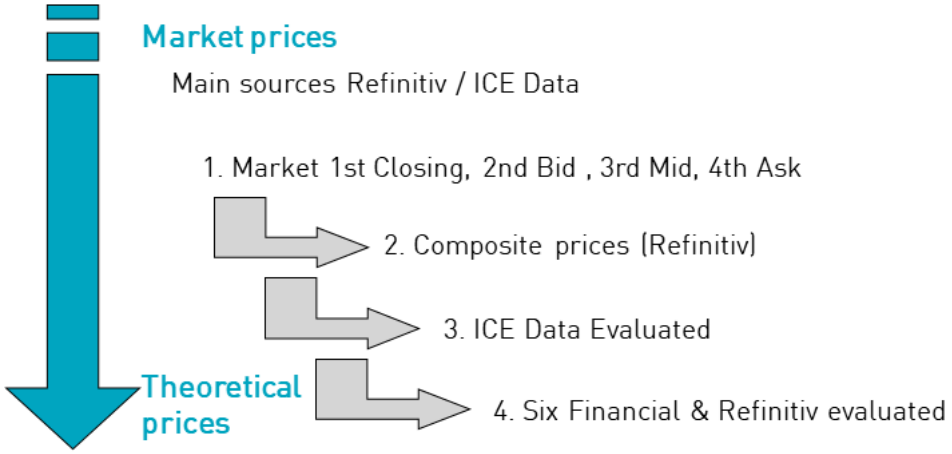


Figure 8-3. Price selection rules

Price control

The following quality controls are in place to ensure that the chosen price is as close as possible to the current market levels for the security:

- **Market consensus**

  If multiple prices are received for the same instrument, the algorithm will check whether sets of prices are sufficiently clustered to form a "market consensus". Depending on the number of prices within the market consensus, a trust level is assigned to the price.

- **Tolerance checks**

  Once a price has been selected, checks are performed to verify whether the change in the value of the price is within standard market variations. Differences of value date and trust level are taken into account in this process.

- **Price age checks**

  Operational processes are also in place to track securities with prices older than three business days, triggering an additional follow-up process. These additional quality controls are performed on the whole Clearstream database, which comprises more than 800,000 securities.

Leverage of evaluated prices

For bonds, if a recent price is not available, alternative sources of evaluated prices are used like IDC bond evaluations or SIX Financial Information.

Note: At contract level, clients can exclude evaluated prices or impose additional haircuts on securities with evaluated prices at issuer type level (sovereign, agency, corporate, structured, convertible bonds) or structured security type level (covered bonds, asset-backed securities, collateralised debt obligations, credit-linked notes, mortgage-backed securities).

Price age

For collateral eligibility purposes, the price age of a security is recalculated daily at 06:00 Luxembourg time, corresponding to the time new business day prices are loaded into the system.

Holidays

The price age of securities is calculated using:

Security Price Age = MAX (0; Clearstream Processing Date - Price Date - (Clearstream holiday or Currency holiday or Issuer Country holiday))

As a result, the price age of a security will not increase at the change of date if the following day is:

- a Clearstream holiday (including weekends); or
- a security currency holiday; or
- a security country of issuer holiday.

ESG Data for Collateral Eligibility

Clearstream Banking offers clients the ability to incorporate Environmental, Social, and Governance (ESG) data into collateral eligibility profiles and basket definitions. This supports sustainable finance objectives by enabling the selection of collateral based on ESG criteria.

ESG ratings and classifications are sourced from Refinitiv for ESG bond categories, and from ISS STOXX for norm-based research, ESG scores, and carbon data. These data points can be used in combination with other eligibility criteria to define rules, apply concentration limits, or create dedicated ESG-compliant collateral baskets.

External valuation options

As neutral collateral management agent, Clearstream currently applies an independent in-house valuation of collateral securities across triparty contracts, as described in preceding sections.

Clients can, however, choose to apply, across selected contracts, their own valuation parameters (prices and/or haircuts), those of their counterparty or those of a third-party data provider.

You can choose from two types of service for external valuation:

- Strict option - restricting collateral eligibility to the securities actually valued by the appointed party;
- Flexible option - prioritising external valuation parameters but, when unavailable, using Clearstream default valuation as fall-back.

The choice of service and external data provider should be indicated per contract in Appendix A of the Collateral Management Service Agreement.

The third-party data provider is responsible for sending a single valuation file per day or multiple intraday valuation files, as the case may be. The files should be sent to Clearstream via Xact File Transfer, our internet file transfer solution, and should contain information as shown in Figure 8-4 below.

Field name	Attribute	Field description	Possible values
ISIN	Mandatory field	Alpha numerical	ISIN codes accepted in CBL
Price	Conditional field (Mandatory if the Margin field is blank)	Numerical character	Numeric > 0
Price currency code	Mandatory field for equities. Optional for bonds & funds.	Alpha numerical	ISO format 3 character
Price Date	Mandatory field	Date	/YYYY/DD/MM
Margin	Optional field	Numerical character	0 < x < 100
Value Date	Mandatory field	Date	/YYYY/DD/MM

Figure 8-4. Valuation file content

For a CSV file template, please contact your GSF Sales and Relationship representative (see "Client services" on page i).

A feedback file is sent back to the data provider via the same communication channel. The processing status indicates whether the file is correctly processed or whether specific securities have failed the validation checks.

Note: When incremental haircuts on security price age have been applied to a contract, these are always taken into account, regardless of whether the initial margin calculation is done by Clearstream or by an external party.

Clearstream ratings

Clearstream applies an in-house rating to both security and issuer ratings in order to determine eligibility under each contract. The ratings are derived through a combination of the Moody's, S&P and Fitch ratings. Within the collateral baskets there are three types of ratings:

- Security Rating: The security rating is always the lowest of our rating providers.
- Issuer Rating: The issuer rating is always the lowest of our rating providers.
- Applied Rating: The applied rating is used to simplify rules within the collateral basket:
  - Sovereign bonds:The applied rating is always the lowest of the security and issuer rating.
  - Non-Sovereign Fixed Income: The applied rating is the security rating, if the security rating is NR then the issuer rating is applied. This default rule can be overridden, at basket level, by excluding issuer ratings per eligible issuer type (agency, corporate, structured, convertible bonds) and/or structured security type.

Issuer ratings are used by default to value equity collateral.

Note: The credit rating selected in accordance with defined client preferences will be consistently applied to both the eligibility check, haircuts and the relevant concentration limit calculation.

Clearstream applied ratings are shown on the Triparty Collateral Management Daily Exposure report.

Figure 8-5 below compares the long-term and the short-term ratings of the three ratings providers with Clearstream's own composite ratings.

Clearstream rating	Moody's	S&P	Fitch
Long term			
AAA	Aaa	AAA	AAA
AA+	Aa1	AA+	AA+
AA	Aa2	AA	AA
AA-	Aa3	AA-	AA-
A+	A1	A+	A+
A	A2	A	A
A-	A3	A-	A-
BBB+	Baa1	BBB+	BBB+
BBB	Baa2	BBB	BBB
BBB-	Baa3	BBB-	BBB-
BB+	Ba1	BB+	BB+
BB	Ba2	BB	BB
BB-	Ba3	BB-	BB-
B+	B1	B+	B+
B	B2	B	B
B-	B3	B-	B-
CCC	Caa1	CCC+	CCC+
CCC	Caa2	CCC	CCC
CCC	Caa3	CCC-	CCC-
CC	Ca	CC	CC
C	C	C	C
D		D	D
NR	NR	NR	NR
Short term			
A-1+	P-1	A-1+	F1+
A-1		A-1	F1
A-2	P-2	A-2	F2
A-3	P-3	A-3	F3
B		B	B
C		C	C
D		D	D
NR	NR	NR	NR

Figure 8-5. Long- and short-term rating scale comparisons

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9. Custody events and corporate actions

This chapter outlines the custody process in place for transactions executed in automatic mode. Collateral Givers who have opted for manual mode processing can manually substitute collateral in anticipation of income or corporate action events on the basis of the corporate actions reference data report and/or the collateral shortage report.

Note: The below process also applies where assets are mobilised through External Sourcing. However, if the account at CEU from where the assets are mobilised has not been set up to benefit from the same asset servicing model as the ICSD ("1CAS"), it will not be possible to provide the service as outlined below. In such cases, CmaX will perform systematic substitutions for each event or corporate action whether taxable or not.

Event handling in CmaX

The handling of custody events and corporate actions that impact securities held in triparty is based on the following considerations:

- Processing each event directly on the collateral account would entail a complex reconciliation and compensation process, which would reduce transparency, especially in the case of taxable events.
- Triggering an auto-substitution in anticipation of each scheduled event impacting a collateral position would limit the available collateral pool unnecessarily, burdening the Collateral Giver with excess funding costs.

The approach taken is to minimise the number of auto-substitutions while at the same time ensuring a transparent compensation process.

Entitlement

Under a transfer of title contract, upon initiation of a transaction, it is assumed that legal and beneficial title to the securities is transferred to the Collateral Receiver during the term of the transaction, in exchange for title to the principal securities or cash or other asset, as the case may be, depending on the type of collateralised agreement.

Due to the nature of a repo or securities lending transaction, involving agreement to repurchase or return equivalent securities upon termination of the transaction, the Collateral Giver retains the risk on the collateral securities and is as such entitled to the corresponding returns.

Clearstream will credit any income payments that arise on collateral securities directly to the collateral account, provided that the securities were held in the account over record date. The proceeds will subsequently be reversed to the Collateral Giver's source account in the form of an equivalent income payment.

In order to ensure that no deficit will arise on the collateral account as a result of this process, Clearstream will only transfer the income proceeds to the Collateral Giver's account after a margin call has taken place, if needed, to fully cover the exposure.

Income entitlements and eligibility for participation in corporate action events are determined according to the following principles:

- Collateral Giver entitlement = Eligible held-free position[1] + Delivered collateral

1. Securities held on source account(s) + securities to be received pending settlement - securities to be delivered pending settlement.

- Collateral Receiver entitlement = Eligible held-free position – Received collateral
- Reuse participant entitlement = Eligible held-free position + Delivered collateral - Received collateral

Triparty participants will be notified of all upcoming custody events and corporate actions on their held-free positions, as well as on the securities they have delivered or received as collateral, through Clearstream custody reporting via all reporting channels.

For further information about Clearstream custody reporting, please refer to the Xact via Swift User Guide on the Clearstream website.

Income payment process

In the event of a non-taxable income payment (coupon or dividend) on a security allocated as collateral, the income proceeds will be credited directly to the collateral account. In a second step, Clearstream will reverse the proceeds to the Collateral Giver, after a margin call has taken place, if necessary, to ensure that a deficit will not arise on the collateral account as a result of the income transfer.

The process is illustrated in Figure 9-1 below.

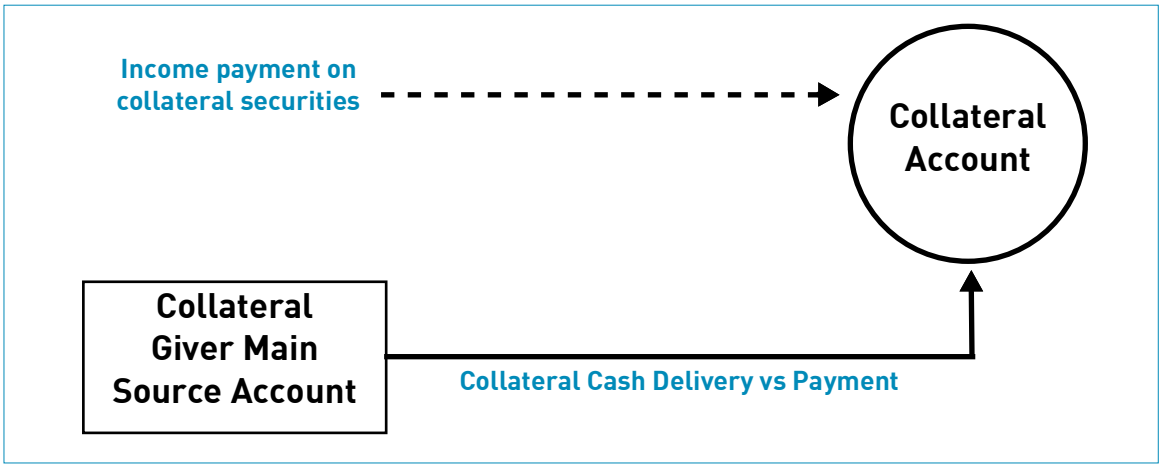


Figure 9-1. Income payment process

For securities allocated in favour of a National Central Bank of the Eurosystem (see chapters on Collateral Pledge to central banks), income payments on a security allocated as collateral as treated as follows:

Cash proceeds will be transferred to the Cash Account of the Collateral Receiver as notified to CBL on the payment date.

Upon receipt of the cash proceeds, the Collateral Receiver shall perform a collateral sufficiency check taking into account both the TPA collateral and the sum of all other collateral mobilised with the Collateral Receiver outside of the TPA services.

- If the counterparty is sufficiently collateralised, the Collateral Receiver shall authorise CBL to debit, or cause to debit, the cash proceeds from the Cash Account of the Collateral Receiver and credit, or cause to credit, the proceeds to Collateral Giver's Account.
- If the overall collateral is insufficient, the Collateral Receiver shall issue no such authorisation to CBL and the cash proceeds shall remain on the account of the Collateral Receiver.

Income payments with negative coupon value do not apply in Clearstream, as the securities are either floored at zero (papers with Clearstream as Issuer CSD) or not eligible for settlement (papers with Clearstream as Investor CSD)[1].

1. Please note that the technical implementation differs from the published ECB guideline.

In case of the Corporate Action event of a Reversal after the initial cash payment, the related payment flow will also be reversed: cash from the compensation payment is collected from the Collateral Giver's account and paid to the NCBs cash account.

No prior authorisation for the debit of the Collateral Giver's and the Collateral Receiver's respective Cash Accounts will be required in such cases.

Collateral securities that are subject to an upcoming taxable income event are automatically substituted back to the Collateral Giver's source account before the record date; the securities become eligible again after the event is fully executed[1].

For details on the substitution trigger dates per income event, refer to Appendix E.

The substitution will only take place if the Collateral Giver holds sufficient eligible collateral for replacement. If this condition is not met, the income is credited to the collateral account and subsequently transferred to the Collateral Giver, after a margin call has taken place, where needed, to ensure that no deficit will arise on the collateral account. Withholding tax is deducted in accordance with the fiscal status of the account holder and transferred net to the Collateral Giver's source account. For transfer of title transactions the Collateral Receiver's fiscal status will apply in all cases, with the exception of the U.S. market, where the Collateral Giver's fiscal status will apply.

Subject to the principal contractual framework governing the counterparties' relationship, the Collateral Giver may be entitled to receive gross income payments on collateral securities. Any obligations to this effect will be handled bilaterally by the counterparties, outside the triparty environment.

Redemption process

Securities subject to final or early redemption or redemption in shares are substituted from the collateral account, before the redemption date, in exchange for eligible replacement collateral.

If the substitution fails, the securities will be redeemed on the collateral account and the resulting cash will be credited to this account. The cash will only be transferred to the Collateral Giver's account after a margin call has taken place. This will ensure that any deficit arising on the collateral account due to the redemption has been fully covered before the cash proceeds are withdrawn.

The same process applies to events with a pool factor of zero.

1. Substitutions will not take place for taxable coupon payments on Italian securities.

Corporate actions

CmaX will trigger automatic substitutions in anticipation of corporate actions on collateral securities "x" business days before the event start date and the securities will remain ineligible for a predefined number of days. The securities become eligible once more for collateral allocation on the event end date (plus an offset period of "y" business days, depending on the event type).The ineligibility periods per event type are summarised in Appendix E.

Figure 9-2 illustrates the timeline for auto-substitutions triggered for corporate actions.

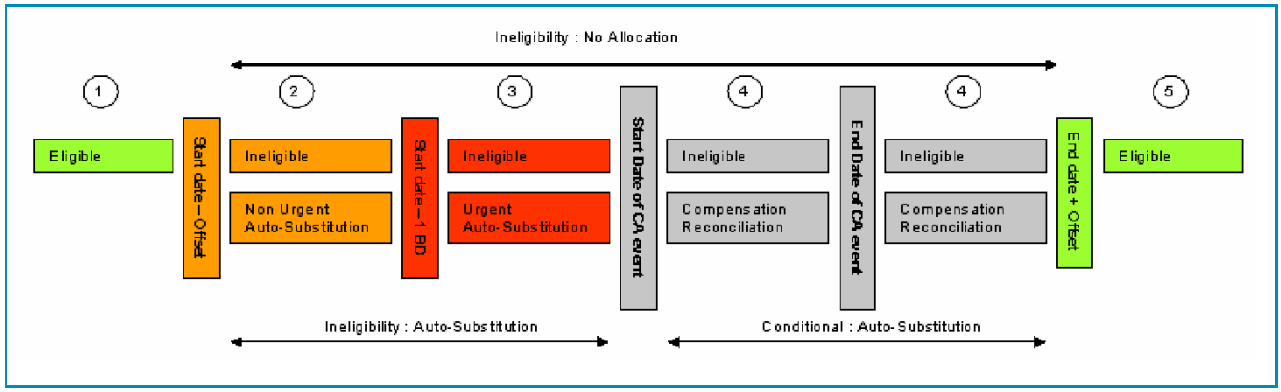


Figure 9-2. Eligibility periods for corporate actions

Period 1: Securities are eligible for allocation.

Period 2: Securities become ineligible when the substitution trigger date is reached.

Period 3: One business day before the event start date, an urgent auto-substitution is processed if the position is still on the collateral account.

Period 4: Securities remain ineligible for allocation until after the end date of the CA event.

Period 5: Securities become eligible again after the event is fully executed.

In the case of corporate actions that are voluntary or mandatory with choice, an instruction sent by the Collateral Giver exercising participation in the event will trigger a collateral substitution if the client has insufficient holdings on the instructed account to fully process the instruction.

In return for eligible replacement collateral, CmaX will trigger an auto-substitution, delivering the necessary quantity of securities back to the Collateral Giver's account in order to fully process the instruction.

If the Collateral Giver does not hold sufficient eligible replacement collateral, the corporate action will be processed on the collateral account. Any resulting credit of cash and/or securities on the collateral account is subsequently reversed to the Collateral Giver.

Note: Securities proceeds accruing to the collateral account are only reversed to the Collateral Giver's source account if this does not result in a deficit on the collateral account.

Bypass Automatic Substitution due to Corporate Actions

The Collateral Giver and Collateral Receiver may select to disapply ineligibility periods and automatic substitutions for all eligible securities as described herein by matching instruction to CBL. When selecting this option, securities will be eligible for auto allocation without reference to any upcoming corporate action. Collateral held on the Collateral Account will neither be substituted due to an upcoming corporate action nor will the Collateral Giver and/or Collateral Receiver receive any report indicating that Collateral will be allocated over the record date. For the avoidance of doubt, the provisions of Article 15 and 20 GCMSA remain applicable.

Unless the Collateral Account has been exempted from withholding tax, withholding taxes may apply.

Withholding tax

To ensure optimal treatment of withholding taxes on collateral accounts, the collateral account owner[1] must provide the required tax exemption forms.

For further information regarding the tax certification process, please contact the Clearstream Banking Tax Help Desk as follows:

	Luxembourg	Frankfurt
Email:	tax@clearstream.com	tax@clearstream.com
Telephone:	+352-243-32835	+49-(0) 69-2 11-1 3821
Fax:	+352-243-632835	+49-(0) 69-2 11-61 3821

1. The collateral account owner is: for transfer of title structures, the Collateral Receiver; for pledge structures, the Collateral Giver.

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10. Connectivity and client reporting

For a comprehensive overview of instruction and reporting capabilities across the range of connectivity solutions, please refer to the CmaX Connectivity Guide, available on the Clearstream website.

For Clearstream to provide its connectivity and reporting services, including notifications to clients covering any step in the triparty collateral lifecycle from (and not limited to) initiation of transactions and amendments (including client notification status) to execution, clients (including any third parties and attorneys) are required to subscribe to the connectivity and reporting solutions made available. This also includes any set-up requests, granting access rights and ensuring the right recipients receive any notifications sent by Clearstream in a timely manner.

Connectivity

Through Clearstream's communications media, clients have real-time access to enhanced information, instruction input, transaction and position reporting, with a choice of connection via web browser, file transfer and the Swift network:

- **Xact Web Portal:** A screen-based, user to application (U2A) connectivity channel based on the latest proven portal technology, whose harmonised security and user management enables streamlined client access to a range of services.
- **Xact File Transfer:** Clearstream's portfolio of file transfer connectivity solutions enables clients to automate file delivery and the receipt of report information. Xact File Transfer is available via Clearstream's Virtual Private Network (VPN), through Swift's File Act service and via the internet on a secure website.
- **Xact via Swift:** Enables clients to instruct and receive messages over the Swift network.

Instructions

Clients can use Xact Web Portal or the industry standard Swift message type MT527 (Triparty Collateral Instruction) to notify exposure and collateral activities across all the triparty collateral management services.

The receipt by CBL of a Swift MT527 shall, in the absence of an Appendix A duly notified to CBL under the relevant Collateral Management Service Agreement, constitute such notification of Appendix A (in addition to the instruction details included in the Swift MT527).

Clients instructing under contracts selected for the Extended Matching Period functionality can benefit from same day settlement if instructions are received via Swift (MT527 format) or Xact Web Portal.

Clients can also choose to instruct via free-format Swift but such communication will incur an additional fee to capture the operational cost and risk of non-STP communication. For further details please refer to the Clearstream Banking Fee Schedule.

The following collateral management activities are supported via the above communication channels:

- New exposure;
- Margin deficit adjustment; [1]

1. Not applicable to Collateral Givers that have subscribed to the AutoAssign Facility.

- Margin excess adjustment; [1]
- Substitution of collateral; [1]
- Exposure termination;
- Changing the exposure closing date;
- Changing rate (applicable to TRS or TSLS2 exposures only).

Reporting

The table in Figure 10-1 below provides an indication of triparty collateral management reports, including their format and availability:

Report name	Format	Collateral Givers/ Receivers	Report content	Additional information about reuse
Daily Exposure Report	PDF + TXT	CG + CR	Exposure details (including margin deficit/excess and a list of allocated collateral)	Yes (For CG only)
Daily Exposure Report (Basel II compliant)	TXT	CG + CR	As above, but including indicative Basel II haircuts	Yes (For CG only)
Summary Report	PDF	CG + CR	Summary of activity per triparty product; the net exposure and the exposure per counterparty	Yes
Counterparties Summary Report	TXT	CG + CR	Summary of activity per triparty product, with a detailed list of exposures	No
Securities Forecast Report	PDF + TXT	CG only	Snapshot indication of potential trading capacity per counterparty	Yes
Sample Securities Forecast Report	PDF + TXT	CG only	Snapshot indication of potential trading capacity based on a list of securities provided by the Collateral Giver	No
Extended Securities Forecast Report	PDF + CSV	CG only	Snapshot indication of potential trading capacity per counterparty for the current date and over the following three business days	Yes
Collateral Shortage Daily Report	PDF + CSV	CG only	Snapshot of fails and deficits on outstanding triparty transactions, as well as the reason for failure	Yes
Real Time Simulation Report	PDF + CSV	CG only	Simulation of allocations of exposures based on current holdings or external file	Yes

Report name	Format	Collateral Givers/ Receivers	Report content	Additional information about reuse
Extended Simulation Report	PDF + CSV	CG only	Simulation of allocations of exposures based on current holdings or external file with optimisation of existing exposures	Yes
Triparty Collateral Management Collateral Allocation Report	TXT	CG + CR	Summary of activity per triparty product, with additional list of fields for SFTR purposes	No
Triparty Collateral Management Reuse Report	TXT	CG only	Details of reused collateral	Yes
Triparty Collateral Management Instruction Status Report	PDF + TXT	CG + CR	Status of same and next day value collateral management instructions requiring matching	Not applicable

Figure 10-1. Overview of triparty collateral management reporting options

Clients levering Extended Matching Period can view the reflection of their collateral management instruction, allocation and holding position based on next day value across all standard reports.

In the context of developing regulatory reporting requirements and in particular the reporting obligations under Regulation (EU) 2015/2365 of the European Parliament and of the Council on transparency of securities financing transactions and of reuse (SFTR), Clearstream clients entering into securities financing transactions may be subject to mandatory reporting to a trade repository (TR).

Clearstream clients intending to leverage triparty collateral management reports provided by Clearstream in the context of their regulatory obligations, may request Clearstream to provide the reporting to their third-party service provider of choice.

Clients looking to route their triparty collateral management reports (including Collateral Allocation Report, Collateral Reuse Report, MT569 Triparty Collateral and Exposure Statement) to a third-party service provider shall instruct Clearstream to do so via a specific instruction document developed for SFTR purposes.

CmaXDirect

In addition to the range of standardised client reports, Collateral Givers can use CmaXDirect, an interactive forecasting tool, to simulate collateral management trades and forecast the resulting collateral positions across all their counterparties. CmaXDirect takes account of concentration limits, dynamic margining, pending deliveries and purchases from the main trading account as well as trades awaiting allocation.

For further details on reporting capabilities across the range of connectivity solutions, please refer to the CmaX Connectivity Guide, available on the Clearstream website.

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11. Event of Default

This chapter outlines the steps to be followed in the case of a default of a triparty collateral management participant and the actions taken by Clearstream upon receipt of a default notice by the affected counterparty.

Note: The default scenarios addressed below are considered in the context of a standard transfer-of-title agreement governed by the GCMSA. For information on the event of default in the context of a different account ownership structure or collateral management service, please contact your Global Securities Financing specialist.

Notice of default

In order to launch the event of default process within the Triparty Collateral Management service, the counterparty of the defaulting participant must send a written notice informing Clearstream of the default.

This notice should be sent via written mail, Swift MT599 or a fax signed by two authorised representatives. Clients are highly recommended to contact their Global Securities Financing representative by telephone in order to advise them of the upcoming notification. This will ensure that actions by Clearstream are taken in the shortest time frame.

For counterparties holding accounts under German law, also notification from the relevant regulation authorities (BaFin) can serve as a default notice.

Event of default - Collateral Giver

Upon receipt of the default notice from the Collateral Receiver, Clearstream will:

- Take no further action on outstanding collateral management or lending transactions involving the defaulting participant.
- Freeze collateral account(s) and stop all intraday collateral movements as soon as practically possible.
- Inform both participants of such measures.
- If instructed accordingly in the default notice, Clearstream will transfer the collateral from the relevant collateral account(s) to the Collateral Receiver's main account in Clearstream for further disposal by the participant. Reused collateral will be included in the transfer of collateral and made available again for reuse if the client's main account is part of the collateral pool. If the main account is not part of the collateral pool, settlement of the transfer of the reused collateral will be subject to successful substitution.

Event of default - Collateral Receiver

Upon receipt of the default notice from the Collateral Giver, Clearstream will:

- Take no further action on outstanding collateral management or lending transactions involving the defaulting participant.
- Freeze collateral account(s) and stop all intraday collateral movements as soon as practically possible.
- Inform both participants of such measures.
- Request matching instructions from both counterparties, determining whether the Collateral Giver will buy back the collateral securities from the Collateral Receiver or secure ownership of the cash held on his account since the initiation of the repo transaction.

Reuse scenario

In the event that the defaulting party is part of a reuse chain, more than one client may be impacted. The general framework outlined above will be applied, taking into consideration any specificities resulting from the reuse chain.

For further information, please contact your Global Securities Financing specialist.

12. Billing

Collateral management fees

Collateral Givers are charged a monthly servicing fee on the basis of their maximum daily allocated volume for all products.The servicing fee is calculated on a sliding scale based on the market value[1] of total assets held across collateral accounts.

The calculation will apply to each asset class (debt, equities, funds, cash and crypto assets) and giver account separately. Collateral Receivers do not incur servicing fees on collateral securities.

Custody administration and corporate event fees will be charged to the Collateral Giver.

Note: The servicing fee for a Collateral Receiver reusing collateral as a Collateral Giver will be calculated as above. The safekeeping fee for re-used collateral will be charged to the first collateral giver in the chain of re-use, that is, the Collateral Giver to whom these assets are proprietary.

External Sourcing fees

Collateral Givers using External Sourcing are charged a monthly servicing fee on the basis of their average daily outstanding volumes mobilised through External Sourcing. The servicing fee is calculated on a fixed fee basis of 0.5bp based on the market value of total assets mobilised through External Sourcing held across collateral accounts.

Note: Assets mobilised through External Sourcing from an Collateral Giver account with CEU are not subject to this fee.

Fees reporting

Clients will receive a monthly Statement of Fees, comprising a breakdown of all fees incurred across services, including Global Securities Financing. Upon request, a Detailed Statement of Triparty Collateral Management Services can also be provided, detailing the daily outstanding volume and the respective daily fees.

For further details about billing, please refer to Clearstream Banking's Fee Schedule, available on the Clearstream website, or contact your Global Securities Financing specialist.

1. Plus accrued interest, where applicable,

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Glossary

Accrued interest
Interest that has been earned on a bond but not yet paid. Typically, interest accrues on a daily basis from the previous coupon date (inclusive) to the value date (exclusive). An investor buying a bond must pay accrued interest to the Collateral Giver.

Agreement
An Agreement represents a relationship between a Collateral Giver and a Collateral Receiver for a given service type with a specific risk profile. The service types are TRS, TSLS1, TSLS2 and TCMS.

AutoAssign (AA)
Securities to be transferred between a Collateral Giver's account and a collateral account are selected automatically according to the eligibility criteria set by the Collateral Receiver in Appendix A of the Collateral Management Service Agreement for Collateral Receivers.

CASCADE
The settlement platform of Clearstream Europe (CEU).

Cash book transfer
Internal realignment of cash between two Clearstream accounts.

Central account
CBL client account used to centralise cash and securities from the triparty collateral management activity.

Clearstream Banking account
An account opened in Clearstream Banking Luxembourg (CBL) or Clearstream Europe AG (CEU).

CEU
Clearstream Europe AG

CmaXDirect
An interactive forecasting tool for simulating collateral management trades and forecasting the resulting collateral positions across all counterparties, taking account of concentration limits, dynamic margining, pending deliveries and purchases from the main trading account as well as trades awaiting allocation.

CmaX
Collateral **ma**nagement e**X**change - the collateral management system of Clearstream Banking Luxembourg (CBL).

Collateral account
An account opened in CBL on behalf of the Collateral Receiver (usually in the case of transfers of title) or on behalf of the Collateral Giver (usually in the case of pledges). Collateral accounts are used solely for collateral management transactions.

Collateral Giver
The party to a transaction that provides collateral securities and/or cash to the Collateral Receiver in exchange for securities and/or cash.

Collateral Receiver
The party to a transaction that lends securities and/or cash to the Collateral Giver in exchange for an amount of securities and/or cash that is held and monitored on the collateral account.

Correspondent Central Bank (CCB)
The local central bank acting on behalf of the Home Central Bank in terms of processing the cross-border liquidity request of the counterparty.

DVP
Delivery against payment. Simultaneous exchange of securities against cash between accounts.

Eligibility check
An eligibility check is carried out on the proposed collateral securities, including verification that the Collateral Giver complies with the Collateral Receiver's criteria for eligible securities, and confirmation that the assets notified for use in the transaction are eligible for settlement in Clearstream Banking.

End of day
20:35 CET. End of day reports incorporate the final activity for a particular value date. Any activity after end of day is considered for the next value date.

Exposure
A trade between a Collateral Giver and a Collateral Receiver to be covered by collateral. Exposure details are, for example, an opening date, a principal or a closing date. "Exposure" is a synonym of "trade", "agreement" or "transaction". An exposure can be the result of a repo trade, a securities loan, a cash loan or any other contractual obligation resulting in the delivery of collateral.

External Sourcing
A service offered by CBL, allowing a client acting as Collateral Giver to link accounts with partnering CSD's or custodian with CmaX allowing to automatically mobilise and use the assets held in these accounts for collateral management transactions.

FOP
Free of payment. Delivery or receipt of securities between accounts with no cash movement.

Home Central Bank (HCB)
The central bank of the country in which the counterparty requesting domestic liquidity through Eurosystem monetary policy operations is based.

Mandatory Settlement Period
Period running from 21:30 on settlement date -1
until 16:10 SD for against payment instructions in all currencies other than USD, CAD, MXN;
until 18:10 SD for against payment instructions in USD, CAD, MXN.

Margin
Also referred to as haircut, the difference between the market value of the collateral and the purchase price paid at the start of a repo. Haircuts are applied, to account for credit and liquidity risks that may impact the value of the collateral allocated during the lifecycle of a transaction or during an event of default and collateral liquidation. Whereas a haircut is expressed as a percentage deduction from the market value of collateral (for example, 5%), a margin is the market value of collateral expressed as a percentage of the purchase price (for example, 105%).

Mark-to-market
The daily valuation of securities held in the collateral accounts and loan securities for TSLS1 and TSLS2.

MT527
The Triparty Collateral Instruction Swift message type used by counterparties to an exposure to notify the Triparty Agent (CBL) of various actions to be taken on a collateral management transaction, including deal initiations. This message type feeds automatically and straight through (STP) into CmaX.

MT558

The Triparty Collateral Status and Processing Advice, available in real-time, that reports those collateral transactions whose processing, matching, allegements, allocation or settlement status has changed.

MT599

The free-format Swift message type used by counterparties to a collateral management transaction to notify the Triparty Agent (CBL) of various actions to be taken on a collateral management transaction, including deal initiations.

National Central Bank (NCB)

The central bank of an EU Member State.

Notification

Formal notification and triparty collateral instruction to Clearstream Banking of various details relating to a triparty collateral management transaction.

Open exposure

An exposure with no definite term. The Collateral Giver and the Collateral Receiver must agree to and notify Clearstream Banking of the termination date.

Own Account

A CBL client account from which any assets can be used as collateral for triparty collateral management activity. An Own Account can be used as a source account but may not hold any "reused" securities.

Reservation account

A dedicated account in Creation or CASCADE/T2S, holding collateral available for securities sales via GC Pooling trades.

Securities lending

A securities lending agreement is one whereby a Collateral Receiver lends securities to a Collateral Giver at an agreed rate.

Segregation account

A dedicated account in Creation or CASCADE/T2S, holding collateral received via GC Pooling trades.

Start of day

21:30 CET on settlement date -1. Start of day reports include updated mark-to-market data on all outstanding collateral management transactions.

Substitution

The process by which a Collateral Giver can replace securities allocated to collateral accounts with other eligible securities.

Sufficiency check

A check carried out on the proposed incoming securities to calculate the nominal amounts of securities required against the exposure. This calculation is based on market prices received from a number of data feeds. The valuation includes the accrued interest to date and the margin requirements agreed between the two counterparties to the transaction.

Value date

The date on which securities are transferred between the Collateral Receiver and the Collateral Giver.

Xact File Transfer

Clearstream's portfolio of file transfer connectivity solutions that enable clients to automate the file delivery of instructions and the receipt of report information. Xact File Transfer is available via Clearstream's Virtual Private Network (VPN), through Swift's File Act service and via the internet on a secure website.

Appendix A. Deadlines

The tables below provide details of the life-cycle deadlines that apply to securities held in custody in the CBL ICSD system. For deadlines specific to External Sourcing, please contact your Sales and Relationship representative (see "Client services" on page i).

Note: All the deadlines indicated below apply to notifications sent via STP communication channels. All notifications sent via non-STP communication channels should be sent two hours in advance of these deadlines. All times are Central European Time (CET) and are subject to Daylight Savings Time when applicable.

Triparty Repo Service (TRS)

Deadlines for deal initiation, exposure increase/decrease and set close date notifications by eligible transaction currency

Transaction currency	Same-day (SD)		Transaction currency	Same-day (SD)	
	AutoAssign	Manual		AutoAssign	Manual
USD, CAD, MXN	19:00	18:00	DKK	12:15	11:30
UYU	17:30	16:30	CZK	12:00	11:00
GBP	17:00	16:00	ZAR	11:00	10:00
EUR	15:30	14:30	HKD	07:15	06:15
HUF	15:00	14:00	SGD	06:45	05:45
CHF	14:45	13:45	MYR	05:30	04:30
SEK	14:00	13:00	AUD	04:00	03:00
ILS, NOK	13:30	12:30	JPY	03:30	02:30
CNY	13:00	12:00	NZD	02:30	01:30
RON	12:30	11:30	XAU	N/A	N/A

Note: For all trades to be settled during the overnight processing for next-day value (SD+1), please submit all notifications by 19:00 on SD.

For trades in XAU settling for next-day value (SD+1), please submit all notifications by 14:00 (AutoAssign) and 12:00 (manual) on SD and note that the earliest possible value date for withdrawal of cash is in these cases is SD+2.

Deadlines for other notifications

Notification type	Same-day (SD)		Next-day (SD+1)	
	AutoAssign	Manual	AutoAssign	Manual
Deficit/excess adjustment	N/A	18:00	N/A	19:00
Substitution	N/A	18:00	N/A	19:00
Fee /Rate Change	19:00	18:00	19:00	19:00
Flexible interest payment	19:00	18:00	19:00	19:00
External valuation file	18:00	18:00	19:00	19:00

Note: For the above operations the relevant cash and securities deadlines are always respected on top of the triparty instruction deadlines.

Euroclear accounts

To source collateral from a Euroclear account, please instruct one hour before the relevant Bridge deadline.

Triparty Securities Lending (TSLS) and Triparty Collateral Management Service (TCMS)

Deadlines for exposure initiation and exposure increase/decrease notifications

Notification type	Same-day (SD)	
	AutoAssign	Manual
Initiation	19:00	18:00
Increase of exposure	19:00	18:00
Decrease of exposure	19:00	18:00

Note: For all trades to be settled during the overnight processing for next day value (SD+1), please submit all notifications by 19:00 on SD.

Deadlines for other notifications

Notification type	Same-day (SD)		Next-day (SD+1)	
	AutoAssign	Manual	AutoAssign	Manual
Deficit/excess adjustment	N/A	18:00	N/A	19:00
Substitution	N/A	18:00	N/A	19:00
Fee/Rate Change	19:00	18:00	19:00	19:00
Loan/exposure termination				
Set close date (for open loans/exposures)	19:00	18:00	19:00	19:00
External valuation file	18:00	18:00	19:00	19:00

Note: For all trades to be settled during the overnight processing for next day value (SD+1), please submit all notifications by 19:00 on SD. For the above operations the relevant cash and securities deadlines are always respected on top of the triparty instruction deadlines.

Timelines for Extended Matching Period

This service is available for TCMS service, and for contracts where extended matching is allowed processing of same day collateral management instructions will be as follows (all times CET):

Input media	Before 19:45	After 19:45 before COD[1]	At COD	After COD before 23:30	23:30 and after
Swift	Processed normally	Recycled to next day and deferred to after COD		New instructions with same day value automatically recycled to next day	Recycled instructions that remain unmatched are cancelled. Same day instructions received are rejected
Xact Web Portal	Processed normally	Input of same day instructions allowed	Unmatched same day instructions recycled to next day		

1. The Clearstream Change of Day (COD) occurs at approximately 20:45 (CET). Therefore, if either counterparty to the contract send a same day instruction that matches after the Clearstream COD, it will be for the next day value.

Euroclear accounts

To source collateral from a Euroclear account, please instruct one hour before the relevant Bridge deadline.

GC Pooling notifications

Euro / DKK, NOK and SEK funding deadline

Contract type	Cash funding deadline
Overnight repo opening - Front leg	30 minutes after trade conclusion
All other contract types - Front and term legs	09:45 on settlement day

USD funding deadline

Contract type	Cash funding deadline
All contract types (non-overnight repo) - Front and term legs	15:00 on settlement day
Overnight repo (front leg)	30 minutes after the trade Conclusion (15.00 at the earliest)

GBP/CHF funding deadline

Contract type	Cash funding deadline
All contract types (non-overnight repo) - Front and term legs	11:30 on settlement day
Overnight repo (front leg)	30 minutes after the trade Conclusion

Notification deadlines for collateral pledge to central banks

For same-day (SD) collateral allocation:

Notification type	Federal Reserve Bank		Deutsche Bundesbank	Banque centrale du Luxembourg
	AutoAssign	Manual		
Initiation	19:00	19:00	17:00	17:00
Increase of exposure	19:00	19:00	17:00	17:00
Decrease of exposure	19:00	19:00	17:00	17:00

Exclusion of specific ISINs

Amendments by the Collateral Giver to basket references in Appendix A (of the Collateral Management Service Agreement (GCMSA)) by notification to Clearstream Banking of an Appendix B consisting of the exclusion of specific ISINs from the basket reference shall be implemented by Clearstream Banking at the latest on the third business day following the receipt of the notification by Clearstream Banking. A corresponding notification by the Collateral Receiver is not necessary.

Appendix B. Sample Default Notice for GCMSA users

(To be completed under client's letterhead)

By Fax to: +352-243-38262

By Swift to: CEDELULL

Attn: Collateral Management Desk

Date: _____

Subject: Default Notice

Dear Sirs,

Reference is made to our Collateral Management Service Agreement for

☐ Collateral Givers (GCMSA) signed _____ OR ☐ Collateral Receivers (GCMSA) signed _____

Pursuant to Article 18.1 of the GCMSA, we hereby notify Clearstream Banking, S.A. ("Clearstream") of an Event of Default of _____ *(counterparty name)*.

We request Clearstream to take no further actions in relation to any triparty collateral management services for Collateral Account(s): _____

We request Clearstream to proceed, subject to, and under the conditions of the GCMSA, with the transfer of Collateral deposited on such Collateral Account(s) to our Clearstream account _____

Yours faithfully

_____ _____

Authorised Signature *Authorised Signature*

_____ _____

Name *Name*

_____ _____

Title *Title*

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Appendix C. Sample Objection Notice for Collateral Receivers

(To be completed under client's letterhead)

By Fax to: +352-243-38262

By Swift to: CEDELULL

Attn: Collateral Management Desk

Date: _____

Subject: Objection Notice

Dear Sirs,

Reference is made to our Collateral Management Service Agreement for Collateral Receivers (GCMSA) signed on _____ and your notice of _____, received by us on _____ [reasonable evidence of time of receipt to be provided to Clearstream] indicating that Clearstream Banking S.A. (Clearstream) has received from _____, acting as Collateral Giver, a default notice with respect to us in relation to Collateral Account(s) _____.

Pursuant to Article 18.1 (b) of the GCMSA, we hereby object to such notice and request Clearstream to continue to operate the above Collateral Account(s) as if no event of default notice had been received.

Yours faithfully

Authorised Signature	*Authorised Signature*
Name	*Name*
Title	*Title*

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Appendix D. Clearstream Standardised Baskets

This Appendix, as amended from time to time, details the standard basket references applicable and in force. The basket references mentioned in Appendices A and B of the GCMSA are deemed to refer to the details of this Appendix C. The electronic version of Appendix C as published on CBL's internet site in English Clearstream Standardised Baskets shall be at any time the legally binding version of Appendix C.

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Appendix E. Custody substitution deadlines

Description	Swift Indicator)	Mandatory Event	With choice	Substitution start date	Substitution end date
Automatic dividend reinvestment	DRIP	Y	N	Record date -2	Payment date +1
Bonus	EXRI	Y/N	N	CBL event deadline -2	CBL event deadline +2
Bonus (automatic)	BONU	Y	N	Record date -2	Payment date +1
Capitalisation/partial redemption by pool factor	CAPI/PRED	Y	N	Record date -2	Payment date +1
Certification of beneficial ownership (U.S.A.)	CERT	Y	Y	CBL event deadline -2	CBL event deadline +1
Choice dividend	DVOP	Y	Y	CBL event deadline -2	CBL event deadline +2
Choice dividend rights distribution	RHDI	Y	N	Record date -2	Payment date +1
Conversion option	CONV	N	N	CBL event deadline -2	CBL event deadline +2
Currency option on interest payment	INTR	Y	Y	CBL event deadline -2	CBL event deadline +1
Currency option on redemption	REDM	Y	Y	CBL event deadline -2	CBL event deadline +1
Demerger/spin-off	SOFF	Y	N	Record date -2	Payment date +1
Dividend	CAPD/CAPG DECR/DVCA/ACCU SHPR/DRCA	Y	N	Record date -3 Certification deadline -2	Record date Record date
Dividend reinvestment	DRIP	N	N	CBL event deadline -2	CBL event deadline +2
Disclosure	DSCL	N	Y	Record date -3	Record date
Early redemption	MCAL	Y	N	Expiration date -2	Expiration date
Exchange offer	EXOF	N Y Y	Y/N N Y	CBL event deadline -2 Assignment date CBL event deadline -2	CBL event deadline +2 Exchange date +1 Exchange date +1
Exchange option	CONV	N	Y/N	CBL event deadline -2	CBL event deadline +2
Final redemption	REDM	Y	N	Expiration date -2	Expiration date
General event	DSCL/OTHR WRTH/TREC ACTV/ATTI BRUP/CLSA DETI/DLST DVSC/EXTM INCR/INFO ODLT/PLAC SMAL/SUSP	Y/N	Y/N	CBL event deadline -2	CBL event deadline +2
Instalment call (partial payment)	PPMT	Y	N	Payment date -3	Payment date +1
Interest amount determination option	SMPG/IAOP	N	N	CBL event deadline -2	CBL event deadline +1
Interest payment	INTR	Y	N	Record date -2	Record date +1
Interest range determination option	SMPG/IROP	N	N	CBL event deadline -2	CBL event deadline +1

Description	Swift Indicator)	Mandatory Event	With choice	Substitution start date	Substitution end date
Liquidation	LIQU/REDM	Y	N	Assignment date	Payment date +1
		Y	N	Record date -2	Record date +1
Meeting	MEET/XMET CMET	N	N	Market deadline -2	Meeting date +1
		N	N	CBL event deadline -2	CBL event deadline +2
		N	N	CBL event deadline -2	Meeting date +1
Merger	MRGR	Y	N	Expiration date -3	Expiration date +1
				Merger date -3	Merger date +1
		Y	Y	CBL event deadline -2	Expiration date +1
Other event	OTHR	Y	N	Record date -2	Record date +1
Pari-Passu	PARI	Y	N	Expiration date -3	Exchange date +1
Partial redemption	DRAW/PCAL	Y	N	Payment date -3	Payment date +1
Redemption at the holder's option	BPUT	N	N	CBL event deadline -2	CBL event deadline +2
Redemption in shares	REDM	Y	Y	CBL event deadline -2	Expiration date
Remarketing	REMK	N	N	CBL event deadline -2	CBL event deadline +1
Repurchase offer	BIDS/DTCH	N	N	CBL event deadline -2	CBL event deadline +2
Reverse stock split	SPLR	Y	N	Record date -2	Payment date +1
Rights distribution	RHDI	Y	N	Record date -2	Payment date +1
Solicitation of a holder's consent	CONS	N	Y	Record date -3	Record date
Stock dividend	DVSE/PINK	Y	N	Record date -2	Payment date +1
Stock split	SPLF	Y	N	Record date -2	Payment date +1
Subscription offer	EXRI/PRIO	N	Y/N	CBL event deadline -2	CBL event deadline +2
Subscription rights distribution	RHDI	Y	N	Record date -2	Payment date +1
Tender offer/purchase offer	TEND/NOOF	N	N	CBL event deadline -2	CBL event deadline +2
		Y	N	Expiration date -2	Expiration date +1
Warrant exercise (general)	EXWA	Y	N	Assignment date	Actual maturity date +1
		N	N	CBL event deadline -2	Actual maturity date +1

Appendix F. Eligible markets for securities

Bonds

Argentina[1]	Germany	Malta	South Africa
Australia	Greece[2]	Mexico	South Africa
Austria	Hong Kong[3]	Netherlands	South Korea[4]
Belgium	Hungary	New Zealand[2]	Spain
Bulgaria	Iceland	Norway[2]	Sweden
Canada	Ireland	Philippines	Switzerland
Croatia	Israel (Maturity > 13 months)	Poland (Government bonds)	Thailand
Cyprus[2]	Italy	Portugal	Turkey
Czech Republic	Japan	Romania	United Kingdom[5]
Denmark	Kenya[6]	Russia	U.S.A.
Dubai (NASDAQ Dubai)	Latvia	Saudi Arabia	Uruguay
Estonia[2]	Lithuania	Singapore	
Finland[2]	Luxembourg	Slovak Republic	
France	Malaysia	Slovenia	

Equities

Argentina[7]	Estonia[2]	Italy	Portugal
Australia	Finland[2]	Japan	Russia
Austria	France	Luxembourg	Singapore
Belgium	Germany	Latvia	Slovak Republic
Bulgaria	Greece	Lithuania	Slovenia
Canada	Hong Kong[8]	Malaysia	Spain
Croatia	Hungary	Malta	Sweden
Cyprus[2]	Iceland	Mexico	Switzerland
Czech Republic	Indonesia	Netherlands	Thailand
Denmark	Ireland	New Zealand[2]	United Kingdom[5]
Dubai (NASDAQ Dubai)	Israel	Norway [2]	U.S.A.[2]

1. Only government bonds.
2. A holding restriction is in place on national beneficial ownership.
3. Only Hong Kong bonds. Chinese bonds accessible via the Bond Connect scheme are not eligible.
4. For KTBs and MSB bonds.
5. UK equities are only eligible in triparty between counterparties with accounts either under the 1.5% or the 0.5% SDRT regime.
6. Only infrastructure and government bonds.
7. Excluded until further notice.
8. Only Hong Kong shares (H-shares). China A-shares accessible via the Stock Connect scheme are not eligible.

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November 2026

Document number: 6390