EUROPEAN CENTRAL BANK

EUROSYSTEM

CCBM2

User Requirements

CCBM2

Version 3.0
28/01/2008

CCBM2

Overview

Introduction   This document describes the user requirements of the Collateral Central
Bank Management (CCBM2) project.

Non-functional requirements are not yet described in the User
Requirements document as they are currently being defined by the
Eurosystem.

Contents   This publication contains the following topics:

Table of Contents

Version 3.0

1. INTRODUCTION TO CCBM2

Overview

Introduction   This document elaborates on the user requirements for CCBM2. Among other things, it is based on:

- the General Documentation on Eurosystem Monetary Policy instruments and procedures
- input received in Eurosystem-internal discussions
- the market consultation launched on April 26, 2007
- the experience of the shared collateral management platform ECMS of the Nationale Bank van België/Banque Nationale de Belgique and De Nederlandsche Bank.

Some of the features described in this document (e.g. the MOP, the issue of repatriation, emergency collateral, concentration limits, valuation of credit claims, and the inclusion of fixed term deposits and liquidity absorbing transactions) are currently being explored by the Eurosystem and thus can be subject to revision at a later stage.

Contents   This chapter contains the following topics:

1.1. Scope of CCBM2

Scope

CCBM2 aims at covering collateralised credit provision by the National Central Banks (NCBs) of the Eurosystem by:

- providing collateral handling functionalities
- handling an important part of the monetary policy implementation
- the provision of intraday credit in central bank money to allow TARGET2 to run smoothly.

Interaction with other Eurosystem applications

The chart below situates CCBM2 vis-à-vis other major Eurosystem projects in the field of competence of the ESCB Payment and Settlement Systems Committee (PSSC) and/or the ESCB Market Operations Committee (MOC). The table below illustrates how CCBM2 interacts with some other Eurosystem applications when dealing with the settlement of a liquidity providing reverse transaction (e.g. the weekly MRO) or regular credit provision.

CCBM2 interacts closely with TARGET2 and TARGET2Securities (T2S). In addition, synergies and possibilities for transverse back office functions with the Market Operations Platform (MOP, see explanation below) will be investigated, e.g. sharing databases for euro and non-euro denominated securities, (SWIFT-) messaging components, valuation routines, fx-swaps etc.
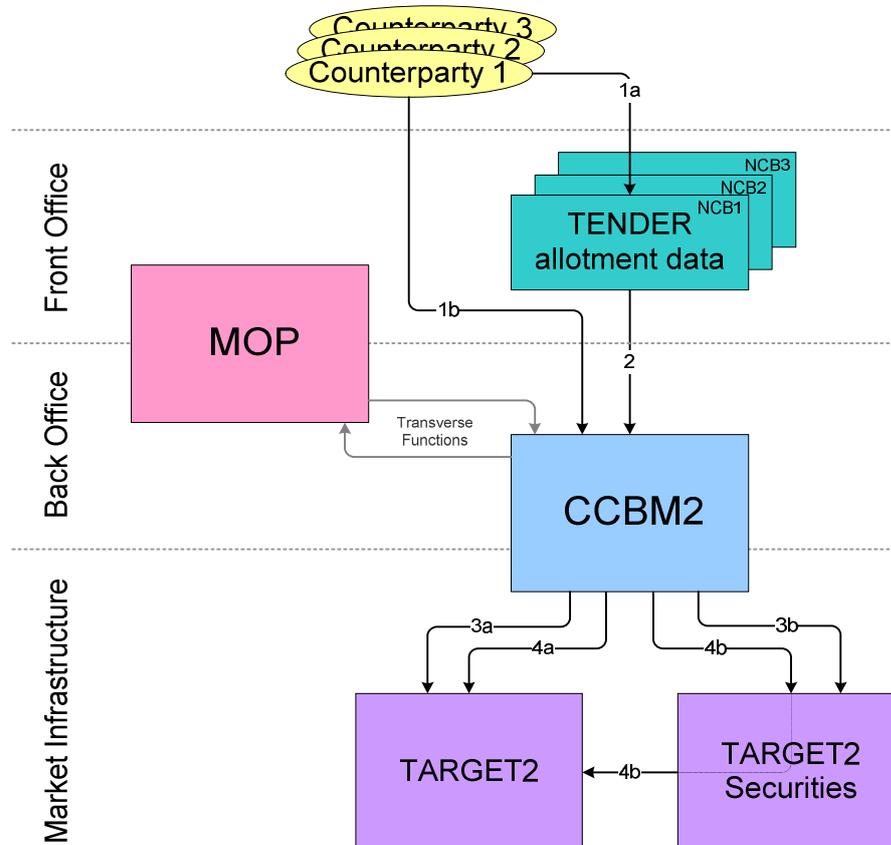
Scope of CCBM2, Continued

Interaction with other Eurosystem applications (continued)

The table below gives an overview of the flow which is illustrated on the chart:

Stage		Description
1	a	Counterparties subscribe to the tender at their own NCB.
	b	Counterparties submit collateral transactions directly in CCBM2
2		The Front Office of each NCB handles the tendering related activities and compiles a file with the tender allotment results. CCBM2 provides a function to import the file with tender data.
3	a	CCBM2 processes the tender allotment data and handles the adequate collateralisation in interaction with TARGET2 (e.g. credit line update).
	b	If necessary, CCBM2 interacts with T2S (SSS) to deliver the securities as collateral.
4	a	For FoP transactions CCBM2 sends a credit provision instruction to TARGET2
	b	For DvP transactions T2S provides liquidity to TARGET2.

Note   The MOP is an ESCB project which involves the implementation of a common-shared technical solution for the execution, processing and settlement of market operations, more specifically, portfolio management and foreign exchange operations.

1.2. Principles of CCBM2

Introduction These User Requirements comply with the principles that were gathered from internal Eurosystem discussions and confirmed in the market consultation, organised by the ECB in April 2007.

Principle 1 *The CCBM2 will provide central banks with an IT platform for the management of eligible collateral used for Eurosystem credit operations, while complying with the principle of decentralisation of access to credit.*

CCBM2 provides an IT platform to NCBs. This platform supports their decentralised credit and collateral relation with their respective monetary policy counterparties and allows rationalising their internal organisation when handling collateral in credit operations.
NCBs will retain legal and business relationship with counterparties and CSDs. Therefore, CCBM2 will not appear as a separate legal entity.

Principle 2 *CCBM2 is fully compatible with TARGET2 and T2S, in particular, with the communication interfaces and the settlement procedures used by T2S for the delivery of the securities.*

CCBM2 closely interacts with TARGET2 for payments and, in the future, with T2S for securities transactions. Moreover, CCBM2 will support auto-collateralisation in T2S.
CCBM2 provides a harmonised service to support interactions with TARGET2 or the Proprietary Home Accounting (PHA). PHAs are supported as far as they use similar harmonised standards as TARGET2.
In addition, CCBM2 offers standardised interfaces and harmonised messaging protocols. This allows all participants, i.e. NCBs and counterparties, to monitor and manage the flow of messages in real time for themselves and on behalf of instructing parties.
Introducing CCBM2 should result in an increased level of harmonisation in terms of communication standards in accordance with the removal of Giovannini barrier 1, scheduled for 2011.

Note - Keep in mind that SSS is used generically in this document. It refers both to the (possible) period that CCBM2 starts operating before T2S and to the period that CCBM2 and T2S (as an SSS-infrastructure) co-exist.
   - Given the fact that the use of PHA and the use of standing facilities could be processed on a permanent basis outside TARGET2, for the relevant NCBs (and thus their respective migration scenario towards TARGET2) the term TARGET2 in this document is used generically. It refers de facto to both the TARGET2 system as well as (where relevant) to the PHA systems.

Continued on next page

Principles of CCBM2, Continued

Principle 3   *The scope of CCBM2 covers both the domestic and cross-border use of collateral, as well as different collateralisation techniques (such as pledge and repo, pooling and earmarking), depending on the practices of each NCB.*

CCBM2 is a fully integrated IT platform. Its scope includes both the domestic and cross-border collateral. It supports the legal techniques of repo and pledge to mobilise the collateral. The collateral can be pooled or earmarked to the credit operations. The full life cycle management of all credit operations is also comprised.

Principle 4   *CCBM2 handles all eligible collateral: both securities and non-marketable debt instruments.*

CCBM2 performs the necessary functions related to the management of instructions regarding all securities movements (automatically creating and sending instructions and a full follow-up of the settlement cycle) as well as those related to custody of securities ultimately held at the local CSD and at the local NCB acting as intermediary custodian.
This means:
• keeping records of mobilised securities and make the necessary book-entries on custody accounts (including where they are carried on the books of an NCB) in accordance with local securities accounting rules
• processing of all corporate actions in accordance with local practices; supporting tax with holding services.

The work that is currently done by CSDs to remove the Giovannini barrier 3 related to the processing of corporate actions will contribute to the harmonisation of back office procedures of CSDs and related interfaces, thereby bringing beneficial effects to CCBM2.
In addition, CCBM2 will also perform the necessary functions for the use of non-marketable assets as collateral.

Principle 5   *CCBM2 processes collateral transactions in real time on a straight-through-processing (STP) basis, permitting the movements of collateral and the related credit adjustments in TARGET2 on a real-time basis.*

Application-to-Application (A2A) communication between counterparties and CCBM2 is based on SWIFT standard messages or secured internet access; thus allowing STP processing.
STP processing allows speeding up credit provision, whether in the provision of intraday credit in TARGET2, marginal lending facilities or settlement of reverse transactions such as MROs and LTROs.

Principles of CCBM2, Continued

Principle 6   *CCBM2 will be able to take collateral through all eligible SSSs and eligible related linkages between them.*

Links between SSSs in various countries have been established for some time.
The issue of repatriation of securities will be further discussed in the Eurosystem. The result of this discussion will not affect the CCBM2-functionalities.
As far as the ECB's Governing Council considers this type of links eligible for use in Eurosystem credit operations, they:

- represent a valid alternative to the current CCBM
- will remain an alternative for the cross-border transfer of collateral after the implementation of CCBM2.

1.3. Functional Modules

Overview

Introduction   This section provides an overview of the CCBM2 functionalities through a brief description of the functional modules of CCBM2.

Contents   This section contains the following topics:

1.3.1. Generalities

Voluntary participation   Participation in CCBM2 is voluntary. CCBM2 remains compatible and interoperable with the current CCBM procedures.

Modularity   The modular approach enables NCBs to choose modules in CCBM2 in accordance with:
- internal NCB requirements; or
- local market requirements.

Example   The participation in CCBM2 could be influenced by:
- the life cycle (amortisation) of current systems; or
- the degree of progress in removal of Giovannini Barriers 1 and 3.

Flexibility   CCBM2 has a high degree of flexibility, in order to:
- be able to swiftly and smoothly adapt to changes in the market
- quickly implement updates or new functions decided by the Governing Council
- support effective modularity
- process efficiently the volumes of all the participating NCBs.

1.3.2. Modular structure

Mandatory and optional modules

CCBM2 is based on a modular architecture, consisting of four modules:

• one mandatory module:
  − Message Router

• three optional modules:
  − Credit & Collateral Module
  − Securities Module
  − Credit Claims Module.

The support functions, such as Static Data, Monitoring and Reporting are always part of CCBM2, regardless of the chosen modules.

Note   CCBM2 offers additional functionalities:
  • to accept new collateral for the TARGET2 contingency module
  • in the domain of emergency collateral.

Schematic overview

1.3.3.   Message Router

Functionality   The Message Router is the mandatory core module of CCBM2.

The Message Router handles the communication between CCBM2 and:
- external parties (e.g. counterparties).
- market infrastructures (e.g. TARGET2)

Moreover, it has the business logic to process the interaction between:
- CCBM2 modules
- any CCBM2 module and external Collateral Management Systems
  (CMS); e.g. proprietary NCB collateral management systems, auto-
  collateralisation; possibly also tri-party services which are currently
  subject tot analysis)

Module composition   The Message Router contains the CCBM2 Workflow Manager and enables
the channelling of all data through the A2A and U2A interfaces

Workflow Manager   The Workflow Manager processes the instruction and defines the routing
path using:
- predefined workflows
- incoming information
- static data

It performs validity checks and follows the life cycle of each operation at
any time.

A2A Interfaces   The Application-to-Application (A2A) Interfaces:
- handle the communication of all the different actors, interacting with
  CCBM2
- enable automated data entry.

1.3.4.   Credit & Collateral Module

Functionality
The Credit & Collateral Module is the core service module of CCBM2, although it is optional. This particular module enables NCBs to centralise collateral related activities for handling monetary policy operations in one application or to grant intraday credit in TARGET2.
The module makes a clear distinction between the pooling and earmarking techniques, though NCBs can use both techniques.

Module composition
The Credit & Collateral Module offers the following components:
- Pooling
- Earmarking

The module also offers the functionality:
- for valuation
- to link with external collateral management systems via the Message Router
- for auto-collateralisation.

Pooling
When an NCB chooses pooling, all collateral is registered in a collateral pool. This pool is managed independently from the credit operations it covers. The Credit & Collateral Module calculates a global sum of the value of all collateralised assets. This pool must always cover the outstanding credit operations and liquidity provision.
In pooling, credit is granted by means of connected payments, internal and external collateral needs or a credit line (overdraft facility).

Earmarking
When an NCB chooses earmarking, all collateral is unequivocally linked to a specific credit operation. Each credit operation must be covered by a well defined set of assets. In earmarking, credit - be it intraday credit, overnight credit or liquidity providing reverse transactions resulting from tender procedures - is granted by means of payments.

External CMS
External collateral management systems can be linked to CCBM2. This can for instance be the case for third party services or an NCB who chooses to use a proprietary system for the recording and mobilisation of securities and/or credit claims.

Auto-collateralisation
CCBM2 provides a harmonised service to support auto-collateralisation procedures. Auto-collateralisation is a procedure in an SSS which allows counterparties to obtain intraday credit from their HCB for the settlement of the DvP securities transactions in which they are involved as a buyer.

1.3.5. Securities Module

Functionality

The optional Securities Module performs:
- all functions which are related to the management of instructions concerning the settlement of securities transactions
- the custody of these securities.

Pledge/repo

The Securities Module handles both the techniques of pledge and repo, the latter in a DvP or FoP mode.

Functions related to the (de)mobilisation

The Securities Module deals with the functions related to the settlement of securities transactions:
- Receiving mobilisation/demobilisation requests
- Validations
- Sending instructions to SSSs, via the Message Router
- Processing of Allegement message, Matching status message, Settlement status message, Settlement confirmation etc.
- Update of the securities accounting records
- Cancellations.

The Securities Module provides the necessary data for the daily reconciliation with the securities positions held by the CSD and CCBM2.

Functions related to the corporate actions

The Securities Module deals with the corporate actions which occur for the coupon payments and partial or full redemptions.

1.3.6. Credit Claims Module

Functionality   The optional Credit Claims Module performs acceptance of non-marketable assets as collateral. Both domestic and cross-border non-marketable assets are dealt with.

Counterparties can mobilise credit claims and retail mortgage-backed debt instruments (RMBDs) as collateral:
- on individual basis or
- through running a bulk procedure.

Different steps   The Credit Claims Module manages the different steps in the recording and mobilisation/demobilisation process:
- Recording in CCBM2
- Validations
- Receipt/return of collateral
- Pricing.

Credit Claims are administered via pooling.

1.3.7. Support functions

Introduction

The support functions of CCBM2 are:
- Management of Static Data
- Monitoring and Reporting

Static Data

The Static Data Support Function serves as a central repository of referential data available to the other CCBM2 modules.

The Static Data contain:
- Application reference data, such as:
  - Actors: NCBs, counterparties, CSDs / SSSs, etc.
  - Administration: payment paths, calendar, fees
  - Authorisation & Auditing data.
- Financial information on the marketable assets, such as:
  - Characteristics of the assets: ISIN code, country of location, coupon, etc.
  - Market prices
  - Pool factors
  - Theoretical valuation
  - Price source priority
  - Payments schedules
  - Credit risk assessment

Financial information will be:
- synchronised with the ECB's Eligible Assets Database (EADB) and the Monetary Policy Eligible Counterparties (MPEC) database
- completed through several external feeders (e.g. valuation hubs of Deutsche Bundesbank and Banque de France, Bloomberg, Reuters, NCB's own feeders) or through a manual entry.

- Financial information on the non-marketable assets, such as:
  - Characteristics of the assets: identification code, type, etc.
  - Redemption schedule
  - Interest rate data: type, value, periodicity, interest formula
  - Nominal amount at issuance
  - Outstanding amount
  - Theoretical price

Note   Respecting the principle of decentralisation of the execution of the monetary policy, each participating NCB will manage its own static data. Only the common data (e.g. the list of eligible securities) will be managed centrally.

Support functions, continued

Monitoring & Reporting

The Monitoring & Reporting Support Function delivers the CCBM2 tools for input, monitoring and reporting.

Each user has his own security profile and access rights to the Monitoring & Reporting Support Functions. The four eyes principle is supported for critical functions (such as the manual entry of credit and collateral instructions).

All participating NCBs and their counterparties have at their disposal tools to:
• follow-up their credit and collateral business managed in CCBM2
• enter and maintain static data manually
• enter credit and collateral instructions manually.

The reporting function comprises two types of reporting:
• current business day: predefined reports from the production database. These fulfil the needs of NCB users and counterparties for the daily management of their credit and collateral
• previous business days: flexible reporting possibilities on data of previous days coming from the Statistical & Reporting Database (SRDB). These fulfil the needs coming from non-time critical reporting such as statistical needs, historical views, input for risk or other analyses etc.

1.4. ICT

General infrastructure

CCBM2 and its future operations are based on a centralised structure with a high level of continuity, security and availability measures.
This infrastructure ensures meeting a number of basic principles that will guarantee an application which satisfies all customer needs and expectations.

Technical operation

The technical operation of CCBM2 is based on a high degree of automation and is compliant with requirements concerning:
• confidentiality
• integrity
• availability.

ESCB compliance

CCBM2 is built in accordance with the ESCB ICT principles and standards.

Interfacing with CCBM2

Interfacing with and accessing CCBM2 is based on:
• SWIFT (ISO15022/20022)
• internal ESCB communication network (so-called EXDI, which stands for ESCB XML Data Interchange)
• Secure Internet Access.
thus meeting the requirements of the market consultation as much as possible

Note   Where ever in the document SWIFT-messages are mentioned, the A2A secure internet access is a fully fledged alternative.

Security

CCBM2 is fully compliant with the Security Requirements and Controls established at ESCB-level.
CCBM2 will for instance provide adequate:
• protection against external intrusion attempts
• protection against unauthorised actions
• protection of the data of each individual owner, etc.

Availability

The availability of CCBM2 will be synchronised with the opening hours of all financial ESCB-applications.

2. MESSAGE ROUTER

Overview

Introduction   This chapter describes the Message Router.

Contents   This part contains the following topics:

2.1. Module Presentation
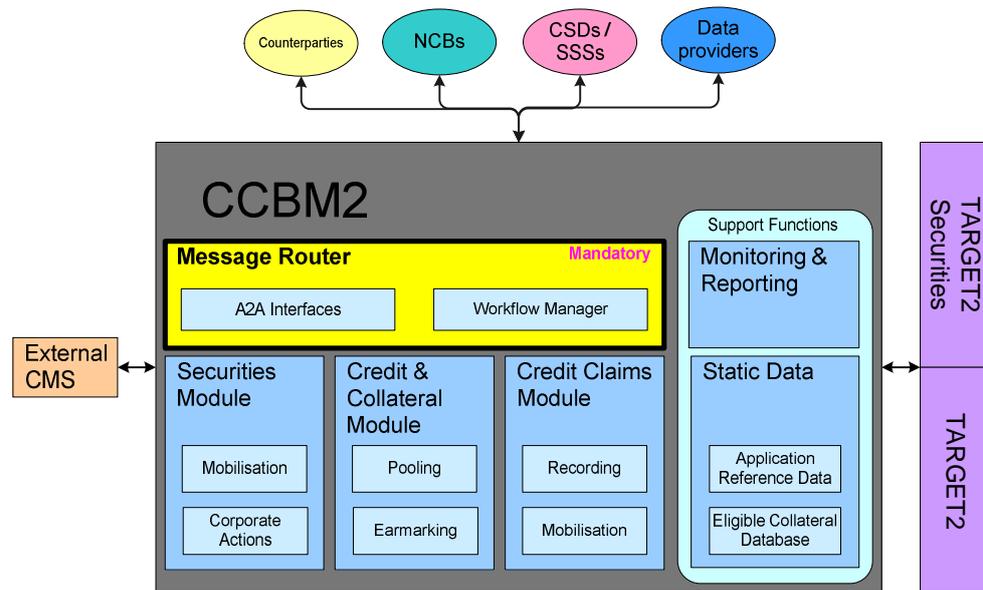
**Mandatory
Module**

The Message Router is the mandatory module of CCBM2.

**Relation to
other modules**

The Message Router closely interacts with:
- the Credit & Collateral Module for credit and collateral management
- the Securities Module for mobilisation/demobilisation of marketable assets
- the Credit Claims Module for mobilisation/demobilisation of non-marketable assets
- the Static Data Support Function for validation checks
- the Monitoring & Reporting Support Function.

2.2. Generalities

Introduction The Message Router handles the communication between CCBM2 and:
- external parties (e.g. counterparties).
- market infrastructures (e.g. TARGET2).

Moreover, it has the business logic to process the interaction between:
- CCBM2 modules
- any CCBM2 module and external CMS (e.g. proprietary NCB collateral management systems, tri-party services, auto-collateralisation)

In this way, it drives and monitors from start till end the business processes related to CCBM2.

Module composition The Message Router contains the CCBM2 Workflow Manager and enables the channelling of all data through the A2A and U2A interfaces

Functionalities The Message Router manages:
- the receipt of incoming instructions
- the syntax and structure validation
- validity checks
- the workflow of the treated operations
- the routing of the received information to the appropriate module (CCBM2 or external module)
- the status of any operation in process
- the preparation of outgoing instructions
- the sending of outgoing instructions
- the communication with external parties
- the communication with market infrastructure
- the conversion of formats
- etc.

Data consultation Participating NCBs and their counterparties are able to follow-up the status of any instruction that is being processed, in real time.

U2A Interface The U2A Interface is described in the chapter "Monitoring & Reporting".

2.3. Workflow Manager

**Workflow
Manager**

The Workflow Manager processes the instruction and defines the routing
path using:
- predefined workflows
- incoming information
- static data

It performs validity checks and follows the life cycle of each operation at
any time.

Every time the Message Router sends instructions to other modules or to
external parties, the status of an operation is changed.
This enables real time monitoring of the processing status of the operations.
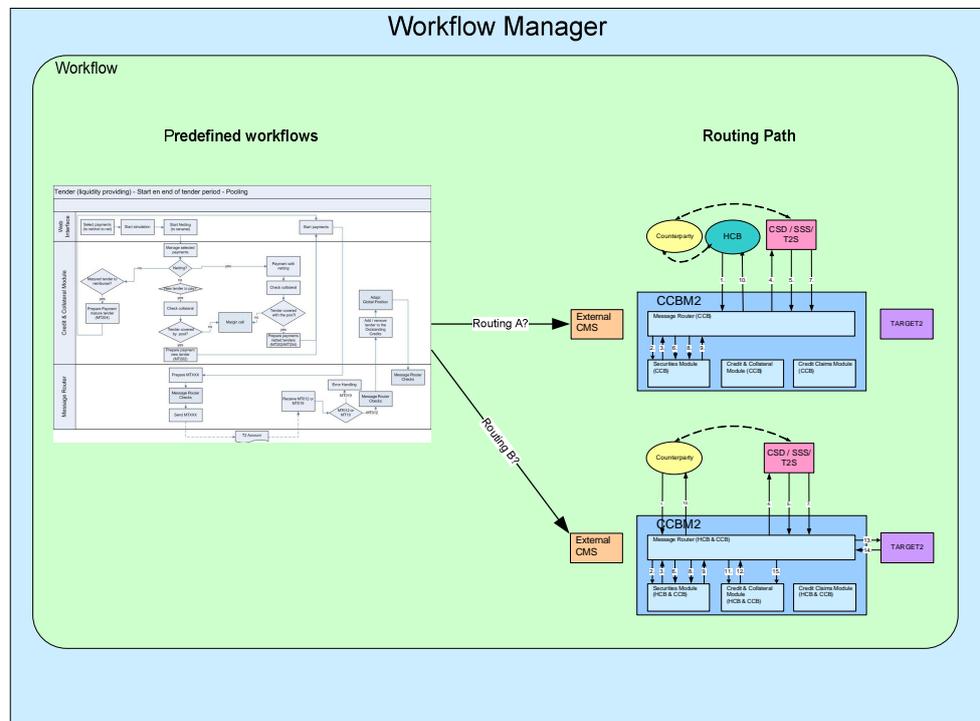
Workflow

A workflow defines the way to process an instruction or an operation
independent of the involved NCBs. It is a sequencing of execution of
CCBM2 functions.

The workflows are the core business of CCBM2 and predefined in the
system.

Workflow Manager, continued

Routing path   One workflow can have different routing paths.

A routing path is a particular order in which modules (internal or external) have to be executed in order to process a workflow. It depends on an actual situation stemming from the involved NCBs, the type of transaction/instruction, the type of collateral etc.

The parameters stored in the Static Data allow a dynamic building of the routing paths.

The Message Router decides each time which routing path will be used for the processing of instructions or operations.

Validity Checks   The Workflow Manager checks the validity of the incoming data against the information in the Static Data.

Amongst others, the following validity checks are performed:
- eligibility of the sender/counterparty
- existence of NCB
- NCB participating in CCBM2
- the counterparty's ESCB membership
- type of collateral.

Workflow Manager, continued

Workflows examples

- Settlement of a tender operation
- Mobilisation of security
- Demobilisation of security
- Cancel of a mobilisation or a demobilisation of a security
- Registration of credit claims
- Mobilisation of credit claims
- Demobilisation of credit claims
- Registration freezing
- Registration collateral from external collateral management
- Global position and consultation/update of TARGET2 or RTGS.
- Assist auto-collateralisation on T2S
- Coupon / redemption payment
- Reconciliation and sending statements of holding
- Static Data consultation and maintenance
- Pricing of a security
- Pricing or a credit claims
- EADB reporting and acquisition
- End of day
- Start of day
- Tax reporting
- Internal transfer
- Cost charging
- Target2 contingency collateral.

Routing path examples

Depending on the choices of the NCBs (participation in CCBM2 and chosen CCBM2 modules), the use cases of chapter 10 mention some routing paths for the mobilisation of securities.

2.4. A2A Interfaces

Function
The Application-to-Application (A2A) Interfaces:
- handle the communication of all the different actors, interacting with CCBM2
- enable automated data entry.

Automated Communication
The A2A Interfaces ensure the automated communication between CCBM2 and external parties.
The different communication networks (such as SWIFTNet, EXDI, Web Interfaces) with the different formats used by different external parties are linked with CCBM2 via the A2A Interfaces.
The different accepted incoming formats are made compatible within the Message Router, which enables further processing in one harmonised format.

Building on the removal of the Giovannini barrier 1, CCBM2 will be able to process incoming/outgoing formats adapted by all the CSDs to which it is connected. CCBM2 will define harmonised incoming/outgoing formats for Eurosystem counterparties.

Incoming instructions
The A2A interfaces:
- receive and store the incoming instructions as such
- perform the basic structure and syntax validation
- perform format conversions
- forward the instructions to the Workflow Manager.

Outgoing instructions
The A2A interfaces:
- receive the instructions from the Workflow Manager
- determine the standard of communication with external parties
- perform format conversions.
- store and send the instructions on the adequate communication network

3. CREDIT & COLLATERAL MODULE

Overview

Introduction   This chapter describes the Credit & Collateral Module of CCBM2.

Contents   This part contains the following topics:

3.1. Module presentation

**Optional
Module**

The Credit & Collateral Module is an optional module.
Participating NCBs can choose the pooling or the earmarking functionality
or both.

**Relation to
other modules**

The Credit & Collateral Module closely interacts with:
- the Message Router for communication and workflow management
- the Securities Module for mobilisation/demobilisation of marketable assets
- the Credit Claims Module for mobilisation/demobilisation of non-
  marketable assets
- the Static Data Support Functions for the pricing information for valuation
- the Monitoring & Reporting Support Functions.

3.2.   Generalities

Introduction   The Credit & Collateral Module enables NCBs to centralise in one application collateral related activities for handling monetary policy operations or to grant intraday credit in TARGET2.
The module makes a clear distinction between the pooling and earmarking techniques.

Module composition   The Credit & Collateral Module offers the following components:
- Pooling
- Earmarking

The module also offers the functionality:
- for valuation
- to link with external collateral management systems via the Message Router
- for support of auto-collateralisation.

Functionality   The Credit & Collateral Module manages:
- valuation of the collateral
- input of reverse transaction allocations
- pooling of collateral
- earmarking of collateral
- combinations of pooling and earmarking
- settlement of credit operations
- marginal lending on request
- concentration limits
- liquidity absorbing reverse transactions and collection of fixed term deposits (optional)
- credit freezings (optional)
- the interaction with external collateral management services (optional)
- support of auto-collateralisation (optional).

Data consultation   Participating NCBs and their counterparties are able to:
- consult, update and monitor their relevant data
- follow up each counterparty's global credit and collateral position.

Pooling & Earmarking   CCBM2 supports the techniques of both pooling and earmarking collateral.
Each NCB has to choose one or both collateral technique(s).

Continued on next page

Generalities, Continued

Pooling When an NCB chooses pooling, all collateral is registered in a collateral pool. This pool is managed independently from the credit operations it covers.
The Credit & Collateral Module calculates per counterparty the global sum of the value of all assets collateralised. This sum must always cover all the outstanding credit operations or liquidity provision.
In pooling, credit is granted by means of:
- connected payments (cf. 3.5.3.1.2) in TARGET2 for liquidity providing reverse transactions resulting from tender procedures (mainly MROs and LTROs);
- a credit line or overdraft facility in TARGET2 upon which counterparties can draw to obtain intraday or overnight credit
- on demand actions for refinancing operations.

Earmarking When an NCB chooses earmarking, the collateral is not managed independently from the credit operations they cover. Collateral is unequivocally linked to a specific credit operation. Each credit operation must be covered by a well-defined set of assets.
In earmarking, credit - intraday credit, overnight credit or liquidity providing reverse transactions resulting from tender procedures - is granted by means of credit transfers or payments.
These payments can take the form of the cash leg of DvP instruction in an SSS or a straight payment in TARGET2, after receipt of collateral (a payment after delivery (PaD)). A PaD is a payment ordered by the Credit & Collateral Module after CCBM2 has received the confirmation that the collateral has been successfully delivered to the NCB.

Repo & pledge Collateral can be mobilised in favour of the NCBs participating in CCBM2 using the legal techniques of repo and pledge. Both mobilisation techniques can be combined with the two techniques of pooling and earmarking the collateral to the outstanding credit operations.

Generalities, Continued

Overview   The table below gives an overview:

	Pool	**Earmarking**
Pledge	• The pledged collateral is not assigned to a specific credit operation • Margining is done at a global level • Intraday and overnight liquidity is provided through a credit line • Tender credits are provided through connected payments	• The pledged collateral is assigned to a specific credit operation • Margining is done at a global level • Intraday and overnight liquidity is provided through a credit transfer on PaD basis • Tender credits are provided through a credit transfer on PaD basis
Repo	• The repo'ed collateral is not assigned to a specific credit operation • Margining is done at a global level • Intraday and overnight liquidity is provided through a credit line • Tender credits are provided through connected payments	• The repo'ed collateral is assigned to a specific credit operation • Margining is done at a global level • Intraday and overnight liquidity is provided on DvP or PaD basis • Tender credits are provided on DvP or PaD basis

In a pooling context, the repos are free-of-payment (FoP), because there is no link between the collateral and the credit provision.
In an earmarking context, the repos can be both on DvP and FoP basis, the latter resulting in a PaD. A pledge always results in a PaD.

Credit claims   In CCBM2, credit claims are managed by pooling only.

3.3.   Valuation

Daily valuation

All assets which are mobilised as collateral are valued by the Credit & Collateral Module on a daily basis or on request.
The valuation method depends on the type of the asset (marketable or credit claims).

Valuation of marketable assets

The valuation of the marketable assets is based on:
- the nominal value
- the price, according to the priorities defined in the Static Data
- the haircut
- the pool factor
- accrued interest
- index factors.

The accrued interest is based on:
- the nominal value
- the coupon rate
- the number of days in the current coupon period
- the number of days in the year
- tax data
- the pool factor.

The data used to calculate the asset value are stored in the Static Data.

Harmonised valuation

The valuation in CCBM2 is harmonised: each ISIN-code has the same price for each NCB/counterparty at a given moment.
Therefore, the Eurosystem needs to set general valuation standards with the same prioritisation of the price feeders for all parties involved.

Valuation of non-marketable assets

To value non-marketable assets, the Credit & Collateral Module retrieves its information from the Static Data, which supports the valuation by nominal amount (based on the nominal value and the haircut) and theoretical valuation e.g. via the present value-approach (PV), according to the rules decided by the Eurosystem. The methods are explained in detail in the Static Data.

3.4. Input of reverse transaction allocations

Input

The respective tender allotment information of the liquidity providing and absorbing reverse operations (i.e. LTROs, MROs , fine tuning and structural operations) can either be imported automatically from the NCB proprietary system or the information can be entered manually.

Bilateral transaction allocations (fine tuning and structural operations) can also be imported automatically or entered manually.

Data in CCBM2

The following data are imported in the Credit & Collateral Module:
- counterparty
- tender ID
- type of reverse operation
- nominal value
- interest rate
- value date
- maturity date
- optional: amount to be earmarked.

Follow-up in CCBM2

CCBM2 offers the possibility to:
- perform a preliminary check if the collateral for open market operations is sufficient
- adjust the reverse operation amount in case of shortage of collateral
- terminate the open market operation in case of a moratorium

The reverse operation amount per credit transaction, including the accrued interests that need to be covered by the collateral, is calculated daily.

3.5. Pooling (repo & pledge)

Overview

Introduction   The Pooling functionality manages the counterparties' credit and collateral position, incorporates all changes in the collateral position and grants credit accordingly.

Contents   This section contains the following topics:

3.5.1.   Functional principles of pooling

Deliver and recall

The techniques repo or pledge allow a counterparty to deliver collateral (i.e. marketable and non-marketable assets) to the collateral pool and recall collateral from the collateral pool. This can be done:
- at any time of the working day, and
- according to the terms and conditions of the relevant SSS.

Using the pool

The collateral pool is used to grant credit by means of:
- connected payments in TARGET2 for liquidity providing reverse transactions, resulting from tender procedures
- a credit line or overdraft facility in TARGET2 upon which counterparties can draw to obtain intraday or overnight credit.

The collateral pool also enables to provide in internal and external collateral needs: credit freezings (optional).

Independency between collateral and credit

The assets in the collateral pool are managed independently from the credits they cover.

3.5.2. Management of the collateral pool

Overview

Introduction   This section describes the management of the collateral pool.

Contents   This section contains the following topics:

3.5.2.1. Management of the pool

Construction of the pool

In CCBM2, each eligible counterparty can deliver collateral to a collateral pool at any time of the working day. This is done through mobilisation of collateral in:
- the Securities Module
- the Credit Claims Module
- an external Collateral Management System.

All the transactions are processed via the Message Router.

Both domestic and cross-border transactions are integrated in the pool.

Vice versa, collateral can be recalled from the pool by the counterparty at any time of the working day. This is only possible when all the outstanding credits are sufficiently covered by the remaining collateral pool.

Collateral subpools

CCBM2 allows several collateral subpools per counterparty. This allows to segregate collateral which was delivered in the global pool of the counterparty per NCB.

<u>Example</u>   It is possible to distinguish collateral delivered by several back offices of the counterparty, its branches, group members, etc.

Collateral modification

In case the collateral is changed, the process is as follows:

Stage	Description
1	A modification occurs in: • the collateral pool (e.g. delivery/recall of collateral by the counterparty) • the value of the pool because of new valuation of an asset, a coupon or (partial) redemption payment etc.
2	The counterparty's position changes and reflects the modification.
3	The credit line managed by CCBM2 in TARGET2 is automatically adapted accordingly, or a margin call requirement is issued.

3.5.2.2. Interactions with other modules

Message Router   The Credit & Collateral Module receives the required information from the Message Router.

Receive/Return   Once the receive/return information is processed, the Credit & Collateral Module adjusts the collateral with the correct value.
In case of PaD transactions, the Credit & Collateral Module triggers the payment.

The details on the transactions are stored in the Securities or Credit Claims Module. These modules follow up on the life cycle of the transactions.

3.5.3. Credit provision

Overview

Introduction   The Credit & Collateral Module is used to handle the following credit operations:
- liquidity providing reverse transactions (MROs, LTROs, fine tuning and structural operations)
- internal and external collateral needs: credit freezings (optional)
- credit line management.

Contents   This section contains the following topics:

3.5.3.1. Liquidity providing reverse transactions

Introduction

This part describes the import of tender allocation results and the settlement of liquidity providing reverse transactions (MROs, LTROs, fine tuning and structural operations), using connected payments and netting.

Contents

This section contains the following topics:

3.5.3.1.1. Connected payments

Reverse operation

In a pooling situation, liquidity providing reverse operations are settled via connected payments. A connected payment links the cash transfers of a tender settlement to the adaptation of the credit line. Both operations are processed simultaneously.

Since indirect TARGET2 participants are allowed to settle open market operations via a direct participant, CCBM2 provides the functionality where the pool is owned by the indirect participant and the cash account is owned by the direct participant.

Illustration

The complete flow of the tender processing for a direct participant is shown below:
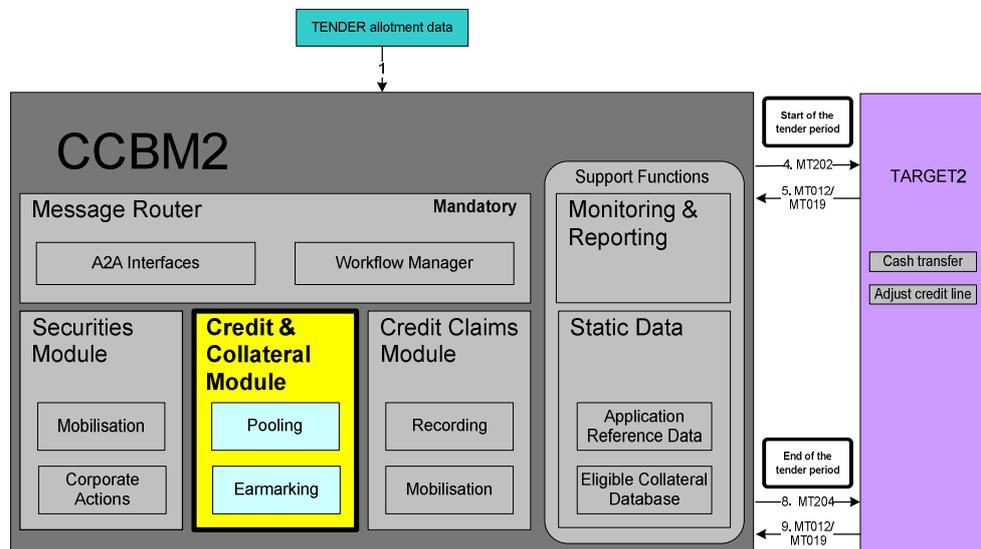
Continued on next page

Connected payments, Continued

Process The process is handled as follows:

Stage	Description (start of period)
1	Allotment data are sent to CCBM2.
2	Message Router receives and processes the tender allotment data.
3	The Credit and Collateral Module stores the information, calculates, nets and prepares 3 connected payments The message with a successful feedback is sent to the Message Router.
4	The Message Router prepares and performs the communication with TARGET2 (MT202 and MT204).
5	TARGET2 sends an MT012(settlement) or MT019 (non-settlement) to the Message Router as soon as the instruction is received.
6	Message Router processes the received information from TARGET2. The Credit & Collateral Module adapts the global position.

Stage	Description (end of period)
7	The Credit & Collateral Module sends the (1 or 2) payments (cash and interest amount) to the Message Router.
8	The Message Router receives and processes the payments.
9	TARGET2 sends an MT012(settlement) or MT019 (non-settlement) to CCBM2 as soon as the instruction is received.
10	Message Router processes the received information from TARGET2. The Credit & Collateral Module adapts the global position.

3.5.3.1.2. Netting

<table>
<tr><td>**Netting payments**</td><td>The Credit & Collateral Module offers the possibility to net the payments of matured and new tender operations.</td></tr>
</table>

<table>
<tr><td>**Example**</td><td>The payment of a matured tender and a new tender can be netted.
Below, you find specifications of two different tenders:</td></tr>
</table>

Specifications	Tender 1	Tender 2
Liquidity providing reverse operation	MRO	MRO
Duration	1 week	1 week
Start date	15/07/2007	22/07/2007
Maturity date	22/07/2007	29/07/2007
Nominal value	€1.000	€700
Interest	€10	€7

Required operations on 22/07/2007 (maturity date of Tender1 and value date of Tender2):

	NCB		Counterparty	
Tender1		**€1.010**	**€1.010**	
Tender2	**€700**			**€700**
Net		**€310**	**€310**	

On 22/07/2007 the counterparty's cash account will be debited with 310 and the NCB's cash account will be credited with 310.

3.5.3.2. Internal and external collateral needs: credit freezings (optional)

Introduction   Optionally, CCBM2 provides credit freezings for different purposes, such as central bank guarantees and counterparty branch credits.

Principle of credit freezing   Credit freezings allow the counterparties to use their collateral pool efficiently.

Central Bank Guarantees   An NCB can use CCBM2 to provide a central bank guarantee:
- for its own internal use
- on behalf of a counterparty
- towards third parties, such as CSDs, CCPs, settlement systems etc.

Process   The process of credit freezing can be as follows:

Stage	Description
1	A credit freezing instruction (MT199) is: o sent by a counterparty or by a CCP/CSD/SSS on behalf of the counterparty, or o entered manually by the NCB.
2	The Message Router validates and processes the incoming instruction.
3	The instruction is processed on a "cancel and replace" mode.
4	The Credit & Collateral Module checks if the coverage of the collateral pool is sufficient and adds the requested freezings to the counterparty's outstanding credits.
5	The credit line is updated.
6	The Message Router prepares the outgoing message.
7	The credit freezings are confirmed to the intermediary through an MT298 message (not applicable in case of manual input).

Counterparty branch credits   CCBM2 enables to freeze a part of a counterparty's credit line and to use it as collateral for granting credit to one or more of the counterparty's branches.

3.5.3.3. Credit line management

Introduction

CCBM2 manages a credit line in TARGET2 or in PHA-systems. This is an overdraft facility upon which can be drawn in order to obtain intraday or overnight credit.

Credit line

In a pooling situation, the credit line (available for intraday credit) is the difference between:
- the global pool of collateral, and
- the sum of all the outstanding credits (the liquidity providing reverse operations - incl. interest accruals - and the credit freezings)

Example

The credit line balances out the total collateral with the total credits, which results in the overview shown in the example below:

Global position counterparty ABC			
Collateral		**Outstanding credits**	
Securities	10 000	Tenders	11 000
Credit claims	10 000		
		Credit Line	9 000
Σ Collateral	20 000	Σ Credits	20 000

Change in credit line

In a pooling situation, the credit line is modified for each change in the total collateral pool or in the outstanding credits.

Communication with TARGET2

A modification in the credit line is communicated to TARGET2 via ICM in A2A mode, through the Message Router.

End of day

In a pooling situation, the TARGET2 end-of-day automatic procedures are used for reversing intraday credit not reimbursed into overnight credit. See §3.6.2.3 "Credit line in T2" for details.

3.5.4. Global position & Margining

Global position The global position gives a complete overview of the counterparty's credit and collateral position in one view.
Based on the circumstances (available collateral , external CMSs, freezings and reverse transactions), the global position per counterparty is calculated in real time and updated accordingly.

Continuous monitoring The Credit & Collateral Module continuously:
• monitors the global position of each counterparty with its NCB
• checks if all the credits are adequately collateralised.

Margining If the value of the collateral does not sufficiently cover the sum of all outstanding credit operations, a margin call requirement is issued.
To reduce the number of margin calls, NCBs can apply a trigger point.

The Credit & Collateral Module provides margin control based on the global margining principle. This means that the total pool of the collateral is considered, regardless of the operations the collateral is used for. The total value of the pool should be within a certain boundary, set by the trigger point.

Issuing a margin call By continuously monitoring each counterparty's global position, CCBM2 provides margin call information in real time. When a margin call is required, CCBM2 flags this information to the NCB.
The NCB decides on the necessary action to be taken. If required, the NCB contacts its counterparty.
The NCB monitors that the situation is clarified.

Resolving a margin call A counterparty can resolve a margin call requirement by:
• delivering additional collateral, or
• transferring cash to its account in TARGET2 (except in case of a tender)

Trigger point The trigger point is the pre-specified level of the value of the liquidity providing reverse transactions at which a margin call is executed.
If used, this trigger point is 0,5% of the amount of the liquidity providing reverse transactions.

Rounding The optional rounding of the credit line calculated by CCBM2 can be set individually per NCB, according to the local needs. E.g. Rounding to the previous multiple of €25 000.

Continued on next page

Global position & Margining, Continued

Principle
The difference between the current credit line and the suggested credit line opening, affects the credit line as follows:

If the difference ... the trigger point,	the ...
<	current credit line remains valid in TARGET2.
≥	suggested credit line replaces the current TARGET2 credit line.

Communication with TARGET2
In order to calculate the difference, CCBM2 retrieves the existing credit line from TARGET2, via the Message Router.

3.6. Earmarking (repo & pledge)

Overview

Introduction   The Earmarking functionality manages the counterparties' credit position
linked to the earmarked collateral.

Contents   This section contains the following topics:

3.6.1. Functional principles of earmarking

Link between collateral and credit

In the Earmarking functionality, collateral is unequivocally linked to a specific credit operation. Each credit operation is thus covered by a well known set of assets.

Earmarking business dialogue

In the Earmarking functionality, the communication between the counterparties and CCBM2 concerns both credit and collateral transactions. The instructions and messages exchanged between the counterparties and CCBM2 contain the necessary data to:
- identify the collateral covering a credit, and
- request for this credit.

3.6.2. Credit provision: payments

Overview

Introduction
The Credit & Collateral Module is used to handle the following credit operations:
- liquidity providing reverse transactions (MROs, LTROs, fine tuning and structural operations)
- intraday and overnight credit (marginal lending).

Contents
This section contains the following topics:

3.6.2.1. Liquidity providing reverse transactions

Introduction   This part describes the settlement of liquidity providing reverse transactions (MRO, LTRO, fine tuning, structural operations) in case of earmarking.

Contents   This section contains the following topics:

3.6.2.1.1. Liquidity providing tender operations

Reverse operations

To settle liquidity providing reverse operations (e.g. MRO and LTRO), the collateral instruction must uniquely refer to this credit operation.
Liquidity providing reverse operations can be settled on DvP or FoP basis.
The DvP modus is described in the Securities Module.

Since indirect TARGET2 participants are allowed to settle open market operations via a direct participant, CCBM2 provides the functionality where the collateral is owned by the indirect participant and the cash account is owned by the direct participant.

Illustration 1

The complete flow of the tender processing in the FoP modus is shown below:
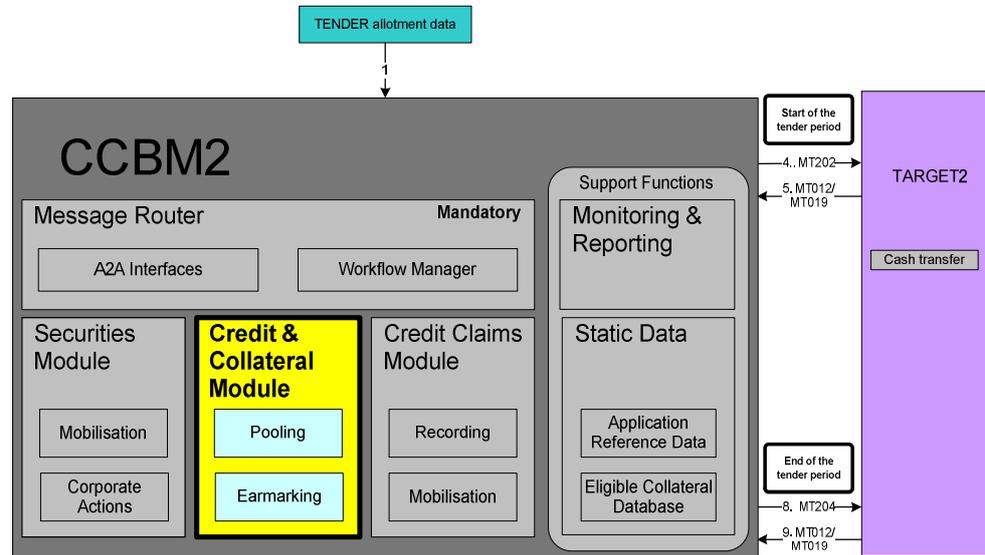
Continued on next page

Liquidity providing tender operations, Continued

FoP

For FoP settlement in an earmarking situation, liquidity providing tender operations are settled **without** using the mechanism of connected payments:

Stage	Description (start of period)
1	Allotment data are sent to CCBM2
2	The Message Router receives and processes the allotment data.
3	The Credit & Collateral Module stores the information, checks if enough collateral has been received and prepares 3 payments per tender operation: • an MT202 with the start of the tender in order to transfer the cash to counterparty's TARGET2 account as value date • an MT204 with the maturity date of the tender in order to debit the cash amount at value date • an MT204 with the maturity date of the tender in order to debit the accrued interest at value date.
4	The Message Router formats and sends the communication to TARGET2 (MT202)
5	TARGET2 sends an MT012 (settlement) or an MT019 (non-settlement) to the Message Router.
6	The Message Router processes the received information from TARGET2 .

Stage	Description (end of period)
7	The Credit & Collateral Module sends the 2 payments (MT204) to the Message Router
8	The Message Router sends the 2 MT204s to TARGET2
9	TARGET2 sends an MT012 (settlement) or an MT019 (non-settlement) to the Message Router. In case of non-settlement, the user can then take appropriate action to solve the problem.
10	The Message Router processes the received information from TARGET2 transfers it to the Credit & Collateral Module.
11	The Credit & Collateral Module marks the collateral as available and initiates a return of the collateral through the Securities Module (via the Message Router).

Liquidity providing tender operations, Continued

Illustration 2   The complete flow of the tender processing in the DvP modus is shown below:
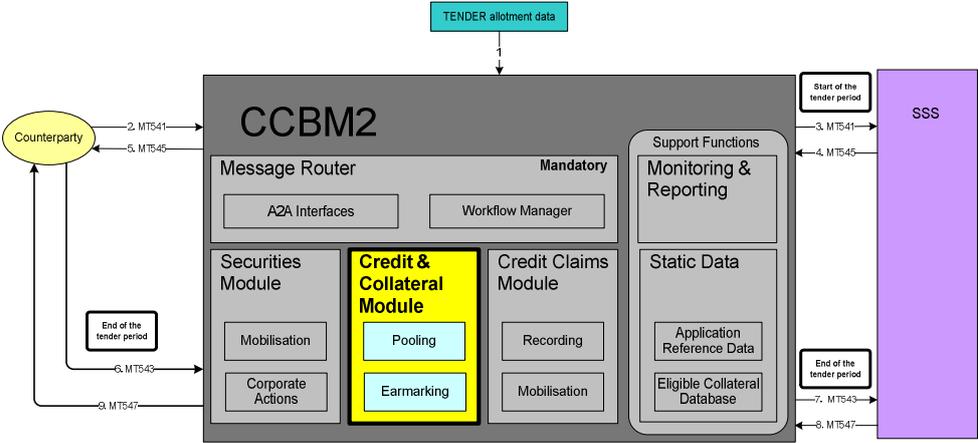
Note   The diagram shows an example where the SSS requires to receive pre-matched instructions.

Continued on next page

Liquidity providing tender operations, Continued

DvP

For DvP settlement in an earmarking situation, liquidity providing tender operations are settled as follows:

Stage	Description (start of period)
1	Allotment data are sent to CCBM2
2	The counterparty sends a DvP instruction (MT541) to CCBM2
3	The Message Router forwards the instruction to SSS/T2S
4	The SSS/T2S settles the transaction and confirms this to CCBM2 via an MT545
5	The counterparty's credit position is updated in the Credit & Collateral Module and the Message Router forwards the confirmation of settlement (MT545) to the counterparty

Stage	Description (end of period)
6	The counterparty sends the reverse DvP instruction (MT543) to CCBM2
7	The Message Router forwards the instruction to theSSS/T2S
8	The SSS/T2S settles the instruction and confirms this via an MT547
9	The counterparty's credit position is updated in the Credit & Collateral Module and the Message Router forwards the confirmation of settlement (MT547) to the counterparty

Note   If the counterparty only sends one repo-instruction for the start and the end of the tender period, stages 6 and, as the case may be, 7 are not required.

Although in the shown example netting is not used, CCBM2 provides for this functionality.

3.6.2.1.2.   Collateral substitution and netting

Substitution   Collateral can be substituted by the counterparty at any time of the working day. However, the collateral value must cover the credit it is linked to.

In case of reuse   Assets that are already collateralised and that have to be reused, remain with the SSS. In any case, the rules and procedures of the SSS have to be followed.

Example   Assets can be reused, e.g. because a previous liquidity providing reverse operation has ended.

Netting   If the SSS offers sophisticated settlement functions for blocks of transactions, CCBM2 will not organise an internal netting of tender and will use these functions.
If the SSS does not provide special settlement facilities, CCBM2 can net the forward and spot legs (both the securities and/or cash leg) before sending them to the SSS.

3.6.2.2.   Intraday and overnight credit

Instructions   A counterparty asking for intraday or overnight credit must send an instruction to CCBM2. The Credit & Collateral Module then interacts (via the Message Router) with the Securities Module to settle the credit and collateral transaction.

Reversing an operation   The instruction has no pre-defined forward leg: the counterparty has to reverse the operation on its own initiative (DvP outright)

Importance of timing   Basically, operations without a pre-defined forward leg can be reversed by the counterparty at any time in CCBM2 if the counterparty has enough cash.
To respect exact timing however, CCBM2 has to align with the rules and procedures of the subjacent SSS.

3.6.2.3. End of day

Principle

The earmarking technique has specific end-of-day procedures for reversing intraday credit operations. These procedures may depend on the SSS rules and procedures and on the fact whether the relevant counterparty has a credit line in TARGET2.

No recourse to marginal lending

In case all intraday credit transactions could be reversed (or a sufficient credit position is available) there is no overnight use of liquidity and the securities are returned to the counterparty.

No credit line in TARGET2

At the end of the day, all intraday credit should be reimbursed. In case of insufficient balance in TARGET2, the counterparty has different alternatives to get cash in order to settle the second leg of the repo: recourse to the market or request an overnight credit (marginal lending facility) by starting a new repo transaction.

The initiative for the (partial) recourse to marginal lending can also be with the NCB. In this case the NCB will make use of the marginal lending on request in order to transform the intraday credit in overnight credit by using the specific TARGET2 procedures.

At the start of the following day, TARGET2 activates the refunding of the marginal lending and notifies CCBM2. Then, CCBM2 adjusts the internal records regarding the status of the credit provision.

Credit line in T2

At the end of the business day, TARGET2 (a specific function in the PM) singles out the amount of intraday credit not returned by the credit institution. Then:

- TARGET2 debits the marginal lending facilities account of the counterparty, transfers the liquidity to the counterparty's RTGS account and simultaneously decreases the credit line (connected payment);
- TARGET2 sends a notification to CCBM2 to inform about the activation of the automatic marginal lending facility;
- CCBM2 adjusts the internal recording regarding the credit line in TARGET2 of the counterparty and keeps record of the amount of marginal lending granted.

At the start of the following day, TARGET2 activates the refunding of the marginal lending, increases the credit line of the counterparty (connected payment) and notifies CCBM2. Then, CCBM2 adjusts the internal records regarding the credit line in T2 of the counterparty and the reimbursement of the marginal lending.

3.6.3. Margining

Margining
The margining process is performed for the sum of all credit transactions registered for a specific counterparty. It takes into account all collateral delivered by that counterparty. Although individual margining is also possible for repo/earmarking, CCBM2 proposes to use global margining, in an attempt to harmonise the procedures among NCBs.

Note   By definition, only monetary policy operations can be outstanding overnight.

Process
The process is as follows:

Stage	Description
1	A modification occurs in: • the collateral value (e.g. new valuation of an asset, a coupon or partial redemption payment etc.) • the outstanding credits (e.g. an interest accrual of a reverse transaction).
2	The modification is immediately reflected in the global position of the counterparty.
3	If the total collateral value does not cover the outstanding operations a margin call takes place and no intraday credit may be drawn. During the day this should not occur, since collateral may not be withdrawn if the value of remaining collateral is insufficient to cover the outstanding credit.

3.7. Pooling & Earmarking combined

Overview

Introduction   The Credit & Collateral Module offers the functionality to use both pooling and earmarking in combination.

Contents   This section contains the following topics:

3.7.1. Functional principles of earmarking combined with pooling

Pooling & Earmarking combined

An NCB decides what collateral technique it normally wants to use: pooling or earmarking. For the cases an NCB uses both collateral techniques, CCBM2 will support this by accepting collateral through repo transactions (DvP and FoP) and using the counterparty's available pool of collateral for the remainder of the collateral requirement.

Earmarking

The concepts of earmarking are applicable:
- The required liquidity, i.e. intraday credit, overnight credit or liquidity providing reverse transactions resulting from tender/bilateral procedures is covered by specifically delivered assets.
- In the process of tender operations, the counterparty will indicate which part of the requested liquidity will be covered by collateral via repo. The repo transactions with the local CSD will automatically take place on a DvP basis (or FoP). All other repo transactions will be on a FoP basis.
- In case of FoP repo, maturing operations with new operations can be netted.

Pooling

The concepts of pooling are applicable:
- Each receipt of collateral is registered in a collateral pool. This pool leads to granting credit through a credit line or overdraft facility in TARGET2 or through connected payments in TARGET2 for liquidity providing reverse transactions resulting from tender procedures (mainly MROs and LTROs).
- The cash settlement of the new operation can be netted with the settlement of the maturing operation.
- The pool of collateral can also be used to square the collateral requirement in the tender process.

3.7.2. Use case: Mobilisation through pooling and earmarking in tender operation

Use case

To clarify the CCBM2 process in the combination of earmarking and pooling, a use case is presented.

The following scheme shows the detailed process step by step, from the perspective of one counterparty, when:
- both pooling and earmarking techniques are used in a domestic or cross-border context
- the collateral requirement stems from a tender operation
- both NCBs (HCB (Home Central Bank) and CCB (Correspondent Central Bank)) participate in CCBM2.

Use case: Mobilisation through pooling and earmarking in tender operation, Continued

Process

Stage	N°	Description
Tender allotment	1	CCBM2 receives tender allotment details in one file, containing information like tender identification, maturity, identification of bids allotted (counterparties may be allotted more than one bid at a different rate) and CCBM2 prepares tender settlement screen. This screen will be presented through the Monitoring function, as shown in stage no. 3.
Connected payments	2	CCBM2 recognises which part of the tender operation will be covered by the pool and prepares the relevant connected payments (see § 3.5.3.1.1 page 45). These payments can be adjusted if earmarking allotment is not reached by MT540/541 sent by the counterparty (see stage no. 6). These payments can be netted with maturing operations, such upon instigation of the relevant NCB. This is a "default parameter" set by the NCB.

Continued on next page

Use case: Mobilisation through pooling and earmarking in tender operation, Continued

Process

Repo transactions	3	CCBM2 receives messages from counterparties: • 3 MT541 instructions (settlement through local CSD), processed STP, after validation of settlement amount (collateral value), and • 2 MT540 instructions (cross border settlement through correspondent NCB/CSD), processed with manual intervention. The "tender settlement screen" shows the details and status of the collateralisation of the tender operation. The NCB-user can indicate whether the FoP transactions have to be netted with the existing ones, or that new transactions will have to be settled.
Settlement DvP repo	4	The (local) SSS credits the RTGS account of the counterparty upon successful settlement of the transactions. This will be reflected in the "tender settlement screen".

Continued on next page

Use case: Mobilisation through pooling and earmarking in tender operation, Continued

Process

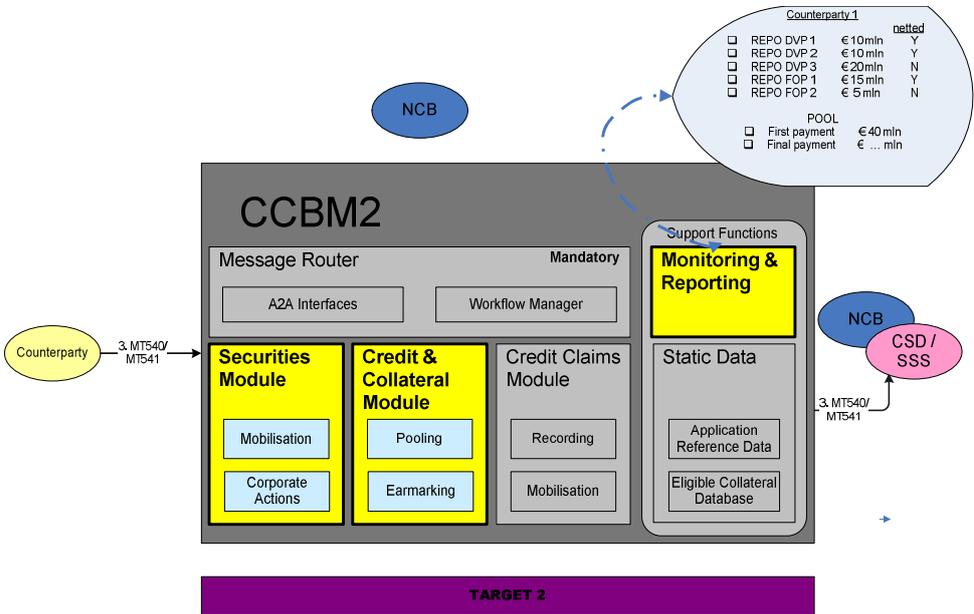| Settlement FoP repo	5	Upon receipt of the confirmation of the successful settlements from the foreign SSSs/NCBs, including the price of the relevant assets, CCBM2 can establish the collateral value and instructs the related payments to TARGET2. For the transactions where the use of netting has been indicated, the relevant assets will not be returned, but remain in the custody account of the CCB.
Monitoring	6	All collateral receipts and related payments are stored in the "tender settlement screen" for final approval by the user-NCB. At the end of the process, the complete tender allotment should be covered by collateral. If the earmarking amount is not reached or is exceeded by the MT540/541 sent by the counterparty, the collateral requirement can be met via the pool (adjustment of connected payment) or via repo (new instructions, cancellations). This can be an automated process. In this example, the collateral value of the FoP repo transactions appeared to be €19.850.000,-, instead of the expected/indicated €20.000.000,-. An additional connected payment of €150.000,- will be made to fully cover the tender allotment.

3.8. Concentration Limits

CCBM2 CCBM2 provides the functionality to fulfil the Eurosystem's requirements concerning concentration limits. A limit can be set in absolute or relative terms or can be a combination of both. A limit can be either a hard or a soft limit.

CCBM2 will be flexible enough to impose limits on different combinations of variables contained in the EADB.

The matter of concentration limits is currently being explored further by the Eurosystem.

Examples
- no more than X% of the collateral submitted by a counterparty may consist of non-marketable assets
- the value of collateral from one asset category (e.g. corporate bonds) submitted by a counterparty may not exceed X% of the total collateral used, or X million euro, whatever is higher
- the value of collateral submitted by a counterparty and issued by one single issuer should not exceed X% of the total collateral used, or X million euro, whatever is higher
- the value of collateral submitted by a counterparty and being part of one issued security should not exceed X% of the total outstanding value of this security, or X million euro, whatever is higher
- the value of collateral consisting in Pfandbriefe issued by the counterparty itself should not exceed X% of the total collateral used, or X million euro, whatever is higher
- the value of collateral consisting in ABSs originated by the counterparty itself should not exceed X% of the total collateral used, or X million euro, whatever is higher (this assumes that the EADB would contain some additional information which is presently not included in the EADB)

Note The CCBM2 function of checking for concentration limits is a complementary function relating to the fulfilment by the counterparty of its obligation not to submit collateral securities exceeding the concentration limits.

Different forms Two possibilities to impose limits are envisaged:
- specific limits such as: limits on issuer/issues, limits on asset types
- a limit to the amount of collateral "financially linked" to a counterparty that a counterparty itself can deliver to the Eurosystem. These "links" refer to types of correlation that are not prohibited by the "no close link" clause, such as Special Purpose Vehicles (SPVs).

These limits are applicable at the level of the individual counterparty.

3.9. Liquidity absorbing reverse transactions and collection of fixed term deposits (optional)

Optional

The handling of liquidity absorbing reverse transactions and collection of fixed term deposits is an optional function of CCBM2.

Settlement

For the settlement of tender allotments, CCBM2 sends three payment instructions to TARGET2:
- one to debit the counterparty's account at the beginning of the transactions
- two to credit this account at maturity:
  - one for the nominal amount and
  - one for the interest amount.

Liquidity absorbing tenders

Liquidity absorbing tenders and the collection of fixed term deposits are not settled via connected payments. At the value date, the TARGET2 account of the counterparty is debited via an MT204 generated by CCBM2. At the maturity date, the amount of the tender including the interest is credited to the counterparty's account via two MT202.

Version 3.0
Credit & Collateral Module - 3.9 Liquidity absorbing reverse transactions and collection of fixed term deposits (optional)

71

3.10. External Collateral Management Systems (optional)

Overview

Introduction   Some NCBs may decide not to choose the Securities and/or Credit Claims Module or to use third party services offered by ICSDs.
For CCBM2, these services or the alternatives to the optional modules are considered as External Collateral Management Services. External CMSs can be seen as a complement or an alternative to the Securities and/or Credit Claims Module.

For the moment, CCBM2 provides two modes to interface with the external CMS:
• Cancel and replace mode
• Transaction by transaction mode.

<u>Note</u>   Each NCB concerned is responsible for the interface between the external CMS and CCBM2.

Contents   This section contains the following topics:

3.10.1. Cancel and replace mode

Introduction

CCBM2 can register a total sum of collateral value via the cancel and replace mode.
If necessary, CCBM2 can interface with several External CMSs and register a value per external CMS.
All the communication is processed via the Message Router.

Interface to CCBM2

In the Cancel and Replace Mode, no individual collateral data are registered.
For cancel and replace transactions, CCBM2 does not use the Securities or Credit Claims Module. Consequently, the functionality embedded in the Securities or Credit Claims Module of CCBM2 is performed outside CCBM2 in the external CMS. Thus CCBM2 does not perform any validity checks on the incoming transaction.

A cancel and replace transaction has no expiry date and its result remains valid until a new cancel and replace transaction is registered.

Registration

In CCBM2, the external collateral sum is registered in two ways:
- the NCB enters the corresponding total collateral value manually or via interface in the pool managed by CCBM2
- the external CMS sends the corresponding total collateral value to CCBM2.

3.10.2. Transaction by transaction mode

Introduction CCBM2 can also interface with external CMSs on a transaction by transaction basis.
The external CMS may be interfaced with CCBM2:
- by means of the Securities Module and/or Credit Claims Module; or
- without the Securities Module and/or Credit Claims Module.

All the communication is processed via the Message Router.

Interfacing with CCBM2 use case 1 The external CMS interfaces with the CCBM2 in exactly the same way as a counterparty interacts with CCBM2. The counterparty sends instructions to the external CMS. The external CMS interfaces with CCBM2 to transfer or mobilise the asset as collateral. In this case the functions of the Securities and/or Credit Claims Module are outsourced to the external CMS.

This illustration shows the use of the Message Router and the Credit & Collateral Module.
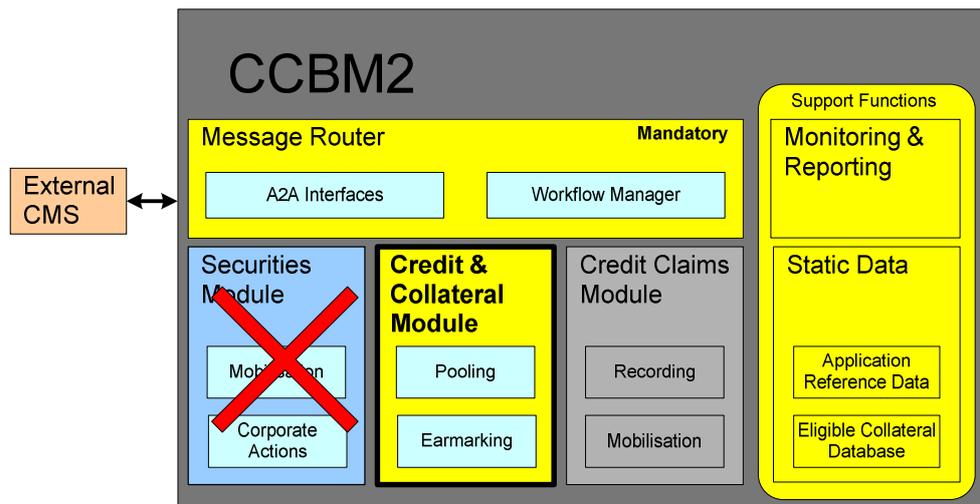
Transaction by transaction mode, Continued

Interfacing with CCBM2 use case 2

The external CMS interfaces with CCBM2 in exactly the same way as the counterparties interface with CCBM2. The external CMS sends collateral instructions to CCBM2 on behalf of the counterparty. CCBM2 makes full use of the Securities or Credit Claims module: there is no outsourcing to the external CMS. Through the Securities and/or Credit Claims Module, the individual collateral data of the External CMS are fully registered and managed in CCBM2.

This illustration shows the use of the Message Router, the Credit and Collateral Module and the Securities Module as an optional module:

.
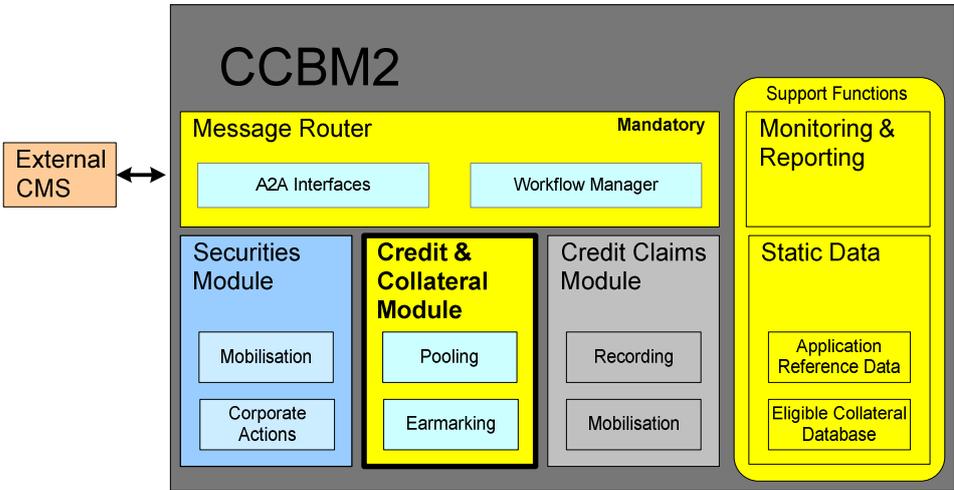
3.11. Auto-collateralisation (optional)

Description
CCBM2 provides a harmonised service to support auto-collateralisation procedures. Auto-collateralisation is a procedure which allows counterparties to obtain intraday credit from their HCB for the settlement of the DvP securities transactions in which they are involved as a buyer.

Motivation
According to the SSS user requirements, an SSS could provide auto-collateralisation services in central bank money (CeBM) to the Eurosystem's eligible counterparties to facilitate the settlement of their securities related instructions.

Place of processing
If the SSS adopts an "integrated" model (e.g. T2S), auto-collateralisation takes place almost entirely in the SSS, because both securities and cash accounts are managed by the SSS. In such a scenario CCBM2 provides the necessary information (such as valuation) to this SSS to be able to run the auto-collateralisation; furthermore, CCBM2 keeps record of the collateral delivered in this SSS for monitoring purposes and, if need be, for accounting reasons.

If the SSS is not T2S and adopts an "interfaced" model, as the cash accounts are managed in TARGET2 or in the PHA of the NCB, CCBM2 provides additional functions in order to activate the provision of intraday credit on the cash account of the counterparty, according to the TARGET2 UDFS.

> Note   Accounting records in CCBM2 might be necessary for legal reasons (e.g. to keep records on the pledge account).

Availability
Auto-collateralisation should be available in pledge and repo environments, according to the legal framework of the relevant central bank and the options envisaged in the TARGET2 UDFS. At this moment, not all SSSs in the Eurosystem offer the auto-collateralisation functionality to their customers.

In accordance with Eurosystem rules
Because auto-collateralisation is basically an intraday credit granting mechanism, it must follow the Eurosystem rules. According to these rules, intraday credit should be reimbursed by the concerned counterparties before the end of the day. If not, at the end of the day, CCBM2 takes the necessary interaction with TARGET2 and/or the SSS, following the different procedures applicable in pledge and repo situations.

Auto-collateralisation (optional), Continued

SSS

The SSS needs:
- the list of eligible counterparties having access to intraday credit through auto-collateralisation
- the list of securities eligible for auto-collateralisation
- the collateral value of the eligible securities (i.e. after valuation and application of the risk control framework)
- information on close links for ex-ante checks (if available).

NCBs

NCBs should be able to:
- set limits to the provision of intraday credit through auto-collateralisation to one or several participants
- restrict the provision of intraday credit through auto-collateralisation at any moment of the day (e.g. for crisis management purposes)
- activate the provision of intraday credit on a transaction-by-transaction basis
- monitor the intraday credit granted.

Information flows

CCBM2 is the shared platform through which participating NCBs manage their credit and collateral for monetary policy operations and intraday credit.

Therefore, CCBM2 should be able to provide those NCBs a view of the exposure of the NCB concerned to its counterparties at any time of the working day. For the operations managed within CCBM2, this can be obtained or derived from the Credit & Collateral Module.

The information flows in auto-collateralisation are illustrated below:
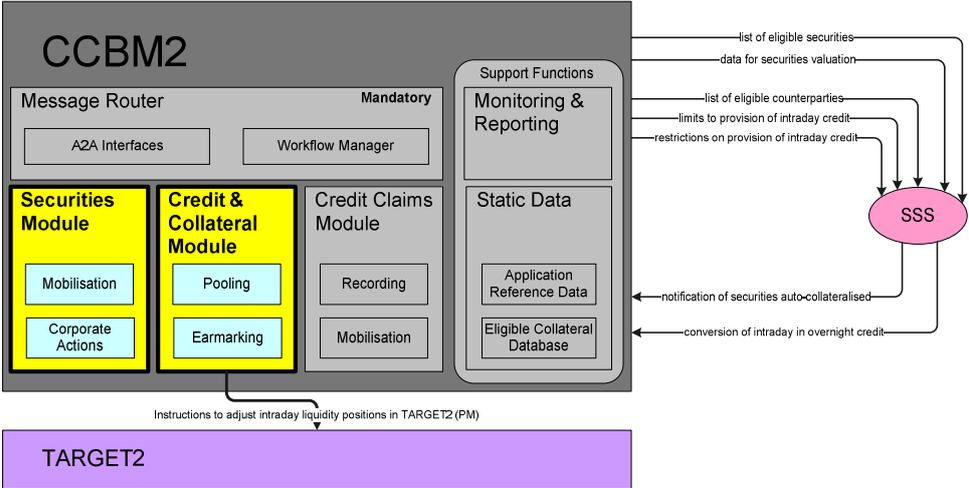
Autocollateralisation (optional), Continued

Use case   The use case below explains the situation of autocollateralisation with an "interfaced" SSS (pledge with pooling; cash-leg settlement in TARGET2).

Process   The following scheme shows how CCBM2 will support the functionality of autocollateralisation, if and when offered by an "interfaced" CSD/SSS (i.e. other than T2S) connected with CCBM2.

Underneath a detailed description is provided of the autocollateralisation process between the CCB, the HCB and an "interfaced" SSS. The working assumption is that both the CCB and the HCB are members of CCBM2. The cross border dimension is incorporated by a counterparty being a remote participant of an SSS. The home NCB of this counterparty interacts through CCBM2 with a CCB, i.e. the NCB of the country of the relevant SSS.

Stage	N°	Description
On S - 1	1	The SSS communicates to CCBM2 the list of assets potentially usable for autocollateralisation purposes (this step is not strictly necessary)
	2	CCBM2 sends to SSS: - the collateral value to be used on the following settlement day for the above list of eligible securities; - the list of eligible counterparties having access to intra-day credit for auto-collateralisation - information on close links for ex-ante checks (if available)

Continued on next page

Autocollateralisation (optional), Continued

Process

Stage	N°	Description
On "S" (Settlement date) Mobilisation / booking	1	The SSS - on behalf on the counterparty - transfers the collateral on the CCB's securities account and notifies such transfer to CCBM2 via an ordinary message (e.g. MT544) with a specific flag (i.e. autocollateralisation))
Accounting records update	2	CCBM2, after having carried out eligibility checks, updates the securities accounting records of the CCB, the HCB (if other than the CCB) and of the counterparty Note: these checks have been already performed by the SSS; they can be carried on by CCBM2 on behalf of the CCB as "double check".
Liquidity provision	3	CCBM2 sends – on behalf of the HCB - a connected payment message to TARGET2 to increase the credit line in the counterparty's main RTGS account and at the same time to debit it in favour of the dedicated sub-account of the counterparty (book 1 - option IIa pledge countries UDFS version 2.4 TARGET2 page 230)(*)
Liquidity provision confirmation	4	TARGET2 confirms to CCBM2 the increase of the blocked liquidity on the sub-account of the counterparty(*)

Continued on next page

Autocollateralisation (optional), Continued

Process	Notification of "end-of-settlement cycle"	5	The SSS uses this blocked liquidity for the securities transaction settlement process, through the specific TARGET2 procedures. At the end of the SSS settlement cycle, the eventual remaining blocked liquidity is released (i.e. "unblocked") and transferred to the main RTGS account. CCBM2 is notified via ASI, because there can be no return of these securities before the end of the settlement cycle.
	Return of collateral	6	Option 1: collateral return on request: During the day, after stage 5, the counterparty can send a request to CCBM2 for the return of collateral according to ordinary procedures of CCBM2. Option 2: automatic collateral return: During the day at pre-defined times (one or more) an automatic process is activated by CCBM2 to return the autocollateralised securities to the counterparty's account at the SSS (i.e. CCBM2, after having successfully reduced the credit line in TARGET2, instructs the SSS to transfer the securities from the CCB's account to the counterparty's account)

Note   A function to decrease the dedicated liquidity originated by autocollateralisation is also foreseen in CCBM2, but only as a specific NCB function performed on an exceptional basis (e.g. reverse transaction in case of errors) normally related to a pre-definite contingency measure vis-à-vis the Ancillary System.
An example of this exceptional case is that stage 5 (settlement process by SSS) can not take place (due to technical reasons) and consequently the intraday liquidity must be returned to the HCB.

Note
(*)   Alternatively CCBM2 may just generate an "opening confirmation" specifying the amount the NCB is willing to transact (the collateral value net of haircuts) allowing the transaction between the NCB and the counterparty/participant to be included into the next processing cycle and improving the counterparty's cash position. Alternatively, where the TARGET2 component system works on a prefund basis, the cash amount needed on the NCB side will be instructed to be transferred from the NCB main account in the PM into the NCB's dedicated sub-account. In the context of the completion of the cycle, it may be transferred upon debit instruction of the ancillary system into its technical account and onwards to the long participants to achieve the settlement of the cycle. Transactions which are not needed for the counterparty's cash position will lapse thereafter.

4. SECURITIES MODULE

Overview

Introduction   The Securities Module deals with mobilisation and demobilisation of marketable assets (securities) that can be used as collateral in Eurosystem credit operations.
This particular module also handles corporate actions related to the mobilised securities.

Contents   This chapter contains the following topics:

4.1. Module Presentation
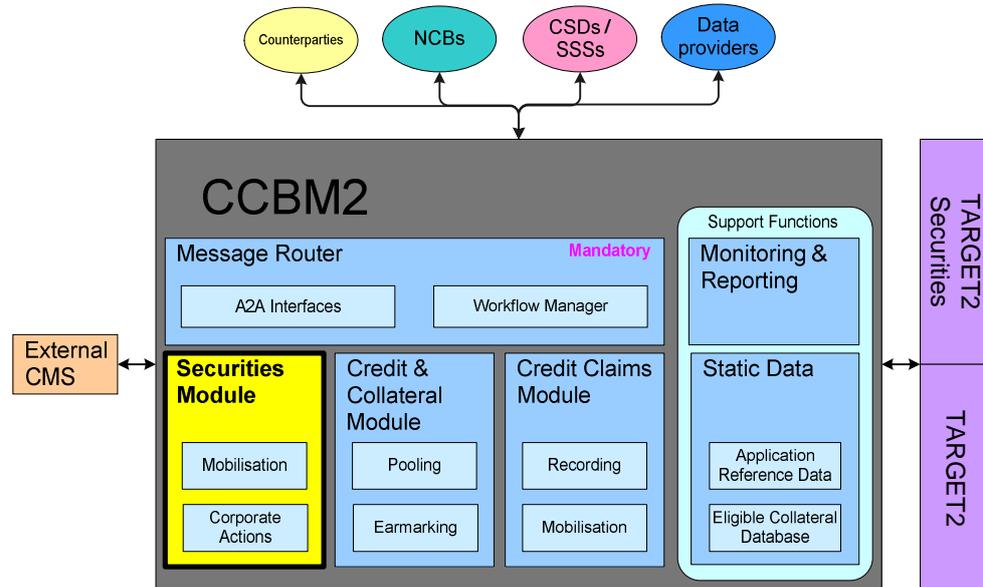
The Securities Module is an optional module.

The Securities Module closely interacts with:
- the Message Router for:
  - exchanging messages with the external parties
- the Credit & Collateral Module (Via the Message Router) for:
  - feeding the valuation & credit processes
- the Static Data Support Function for using:
  - the Application Reference Data
  - the Eligible Collateral Database
- the Monitoring & Reporting Support Function.

The Securities Module does not interact with the Credit Claims Module.

4.2. Generalities

Harmonisation
The Securities Module communicates via the Message Router with all eligible SSSs and counterparties in a similar way, based on SWIFT (ISO15022/20022) standards or via a secure internet access.
The choice for SWIFT-standards is the market solution for the removal of Giovannini barrier 1, to be implemented no later than March 2011.

Payments
Payments between the involved parties (for processing of corporate actions and the cash amount of DvP transactions), are made in Central Bank money.

Data input and consultation
The participating NCBs and their counterparties can consult the data they have access to and follow the processing of the instructions through the Monitoring & Reporting Support Function. This module also offers manual input of securities instructions for both participating NCBs and counterparties.

Valuation
The valuation of the mobilised collateral and the impact on the Global Position of a counterparty are not included in the scope of the Securities Module, but are managed by the Credit & Collateral Module.

4.3. Mobilisation

Overview

This section describes the mobilisation of marketable assets.

Contents

This section contains the following topics:

4.3.1. Functionalities and flows

Functionalities

This part of the Securities Module manages the functionalities for mobilisation:
- Receiving mobilisation requests
- Validations
- Sending instructions to SSSs via the Message Router
- Processing of Allegement message, Matching status message, Settlement status message, Settlement confirmation etc.
- Update of the securities accounting records
- Cancellations.

Flows for processing securities

There are three possible flows for processing securities:
- Domestic and cross-border mobilisation between two participating NCBs and their counterparties
- Cross-border mobilisation when only the Home Central Bank (HCB) participates in CCBM2
- Cross-border mobilisation when only the Correspondent Central Bank (CCB) participates in CCBM2.

4.3.2. Receiving requests

Communication methods All communication with the Securities Module is done on a transaction basis, i.e. no bulk processing.

Pledge & Repo Each request can be made via two possible transaction types:
- pledge, characterised by:
  − securities being transferred FoP to the counterparty's HCB, or
  − securities being registered as pledged to the NCB according to any other legal arrangement applicable to the SSS (or the NCB's custody accounts)

  The legal ownership remains in the hands of the counterparty;
- repo transactions, characterised by:
  − securities being transferred FoP (with separate settlement of the cash part after settlement of the securities part) or DvP to the HCB of the counterparty
  − the second leg can be independent from the first leg, or both legs can be managed by one instruction

  The legal ownership is simultaneously transferred to the HCB.

The value of the securities that need to be mobilised, can be obtained through the Credit & Collateral module. For DvP instructions, the cash amount must be taken from the same module.

DvP & FoP As far as the NCB accepts collateral via repo:
- DvP is only possible in a domestic context in the current state of play
- FoP is possible in both domestic and cross-border context.

<u>Note</u> With the implementation of T2S, DvP can also apply to the cross-border context.

Counterparty instructions The counterparty sends the following messages to the CCBM2 platform:
- FoP transactions are instructed by means of MT540 (receive free of payment)
- DvP transactions are instructed by MT541 (receive against payment)
- for cross-border operations: if the HCB does not participate in CCBM2 but the CCB does, the HCB has to send the request to CCBM2 instead of the counterparty.

<u>Note</u> Depending on the go-live date of CCBM2, there might be other ISO compliant messages be used.

4.3.3. Validations

Message router All requests are directed via the Message Router, which:
- performs basic validation (e.g. authorised SWIFT address), and
- posts the request to the Securities Module, which then performs some checks.

Eligibility checks As soon as the Securities Module receives the request from the Message Router, it further validates the request by performing eligibility checks. For example:
- check on asset eligibility
- check on close links.

Additional checks The Securities Module may need to perform additional checks, (e.g. depending on the HCB granting the credit).
All necessary checks are performed using the Application Reference Data within the Static Data, as far as the necessary information is available.

For DvP transactions, the amount of the cash part is checked in the Credit & Collateral Module.

Validation result When the criteria are not met, the counterparty receives a feedback message (MT548) which uses standardised qualifiers. The transaction becomes void. It is now up to the counterparty to take appropriate action.

In the opposite case, each valid mobilisation request causes CCBM2 to send a securities instruction on a STP-basis to the SSS on behalf of the relevant NCB.
In a cross-border operation with the CCB not participating in CCBM2, the instruction is sent to the NCB which is responsible to instruct the SSS.

4.3.4. Interaction with SSSs

Sending instructions

After positive validation of the mobilisation request, the Message Router sends a securities instruction to the SSS, on behalf of the relevant NCB. Some SSSs may require a matching instruction by both parties involved in the transaction. Other SSSs use pre-matched instructions.

Processing status

When the SSS has received the instruction from CCBM2, the SSS sends an MT548 on the processing status to CCBM2.
The following cases can occur:

- Accepted & unmatched:
  Each accepted instruction from CCBM2 to settle securities as collateral, can remain unmatched for a while. No immediate further action is required from CCBM2.
  As far as SSSs provide information on similar notifications by the counterpart (e.g. MT578 Settlement allegement), this information can be used by the relevant NCB to find the reason of the non-matching and to contact the sender of the request when needed.
- Accepted & matched:
  The transaction is ready for settlement on the due settlement date.
- Rejected:
  A manual intervention by the relevant NCB is necessary to continue or abort the transaction.

Note   The counterparty can check the processing status via the Monitoring & Reporting Support Function.

Outside CCBM2

If in a cross-border context:

- the CCB participates in CCBM2 and the HCB not, CCBM2 sends an MT548 only in case of a rejection
- the HCB participates in CCBM2 and the CCB not, the CCB is supposed to send an MT548 to CCBM2 in case of rejection.

Interaction with SSSs, Continued

Settlement

On the due settlement date, the SSS tries to settle the mobilisation transaction.

When the SSS has settled the transaction, following actions are taken respectively:

- the SSS informs CCBM2 through a message (MT544 for FoP and MT545 for DvP)
- CCBM2 notifies the counterparty of the settlement, using a copy of the confirmation message
- the securities positions of the concerned counterparty and participating NCB are modified in CCBM2.

If a repo was settled on a DvP basis, both cash and securities settlement are managed by the SSS at the same time.

If a repo with a separate cash part was used, the cash part can be settled only after the securities part was settled. The cash part is managed by the Credit & Collateral Module.

When the SSS settles cash and/or securities operations on a multilateral basis (e.g. the SSS adopts DvP Model 2 and Model 3), CCBM2, if needed, provides reconciliation procedures between the net balances settled and the individual operations.

HCB/CCB outside CCBM2

If the HCB does not participate in CCBM2, a copy of the settlement confirmation is delivered to that NCB by CCBM2.

In case the CCB does not participate in CCBM2, it will inform CCBM2 about the settlement in a similar way.

Credit & Collateral

The Credit & Collateral Module uses the settlement information to adjust the collateral and credit positions of the counterparty for participating NCBs.

4.3.5.   Accounting records

Accounting records

The Securities Module keeps accounting records of the securities mobilised as collateral according to the local securities accounting rules and kept with the (I)CSDs and NCBs.

In legal terms CCBM2 complies with two distinct concepts. On the one hand the mere recording (storing of information) of transactions or, alternatively, book-entries made on custody accounts (carried by the NCBs on their books for their counterparties).

Omnibus or segregated accounts with the CSDs

NCBs continue to have their securities accounts with their (I)CSDs as in the current collateral framework. CCBM2 will be mandated to operate these accounts on their behalf. CCBM2 supports both segregated and/or omnibus accounts.
Anyway the NCBs retain, to the extent necessary, the operating authority over their securities accounts with their respective CSDs.

Confirmation of settlement

After having received a confirmation of settlement (MT544 message) the securities module updates the corresponding securities accounting records.

CCB and HCB in CCBM2

If for a cross-border settlement both the HCB and CCB participate in CCBM2, the Securities Module will update after the receipt of the confirmation of settlement from the SSS all accounting records, i.e. from the CCB and HCB.

CCB outside CCBM2

If for a cross-border settlement the HCB participates in CCBM2 and the CCB not, the Securities Module will update after the receipt of the confirmation of settlement from the CCB the accounting records of the HCB.

HCB outside CCBM2

If the CCB participates in CCBM2 and the HCB not, the Securities Module will update after the receipt of the confirmation of settlement from the SSS the accounting records of the CCB.

4.3.6. Cancellations

Timing

Cancellations can be performed before or even after matching takes place, depending on the SSS, but before settlement.

Initiators

Cancellations can be initiated by:
- the counterparty, according to the rules of the concerned SSS
- the SSS, when the securities or cash cannot be delivered. In this case, the transaction can possibly be carried forward to the next settlement date
- CCBM2, on behalf of the counterparty, in case of pre-matched instructions.

In some cases however, CCBM2 can decide to ask the counterparty to send a cancellation request to the SSS. In that case, CCBM2 sends a matching instruction when necessary.

Feedback

CCBM2 is informed by the SSS via an MT548, or by the non-participating CCB for a cross-border operation, and adapts the status of the request on its platform without further notification.
If a CCBM2 CCB acts on behalf of a non-participating HCB, the HCB is informed about the cancellation.

Carrying forward

If the SSS carries transactions forward to the next settlement date, CCBM2 adapts the history of the collateral request to reflect the modification of the previous settlement date.

4.3.7. Use case 1: Domestic and cross-border mobilisation between two participating NCBs

Process

The following scheme shows how securities are successfully mobilised as collateral when:

• collateral is used in a domestic or cross-border context
• both NCBs (HCB and CCB) participate in CCBM2
• SWIFT or Web based communication channels are used (the example show the use of SWIFTFin messages).
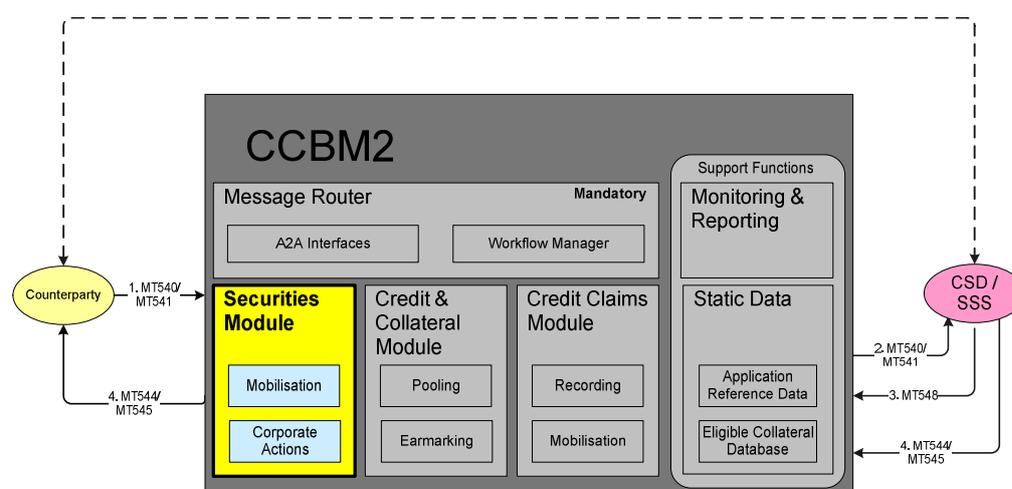
Stage	Nº	Description
Mobilisation request	1	The counterparty sends an MT540 (FoP) or MT541 (DvP) to CCBM2.
Validation		The Securities Module performs eligibility checks and additional checks.
Sending instruction	2	CCBM2 sends an MT540/MT541 to SSS.
Matching	3	SSS sends an MT548 to CCBM2 as soon as the instruction is received, and another MT548 when matching occurs afterwards.
Settlement	4	SSS sends an MT544 (FoP) or MT545 (DvP) to CCBM2.
		CCBM2 sends an MT544 or MT545 to the counterparty.

Note   All communication from/to external parties or other modules is done through the Message Router.

4.3.8. Use case 2: Cross-border mobilisation when only HCB participates in CCBM2

Process

The following scheme shows how securities are successfully mobilised as collateral when:

- collateral is used in a cross-border context
- only the HCB participates in CCBM2
- SWIFT or Web based communication channels are used (the example show the use of SWIFTFin messages).

Stage	N⁰	Description
Mobilisation	1	The counterparty sends an MT540 (FoP) to CCBM2.
Validation		The Securities Module performs eligibility checks and additional checks.
Sending instruction	2	CCBM2 sends an MT540 to the CCB.
		The CCB sends an MT540 to SSS.
Matching	3	The matching flow takes place outside CCBM2 between the CCB and SSS.
Settlement	4	SSS sends a settlement confirmation to the CCB.
		CCB sends an MT544 (FoP) to CCBM2.
		CCBM2 sends an MT544 to the counterparty.

Note   All communication from/to external parties or other modules is done through the Message Router.

4.3.9. Use case 3: Cross-border mobilisation when only CCB participates in CCBM2

Process

The following scheme shows how securities are successfully mobilised as collateral when:

- collateral is used in a cross-border context
- only the CCB participates in CCBM2
- SWIFT or Web based communication channels are used (the example show the use of SWIFTFin messages).

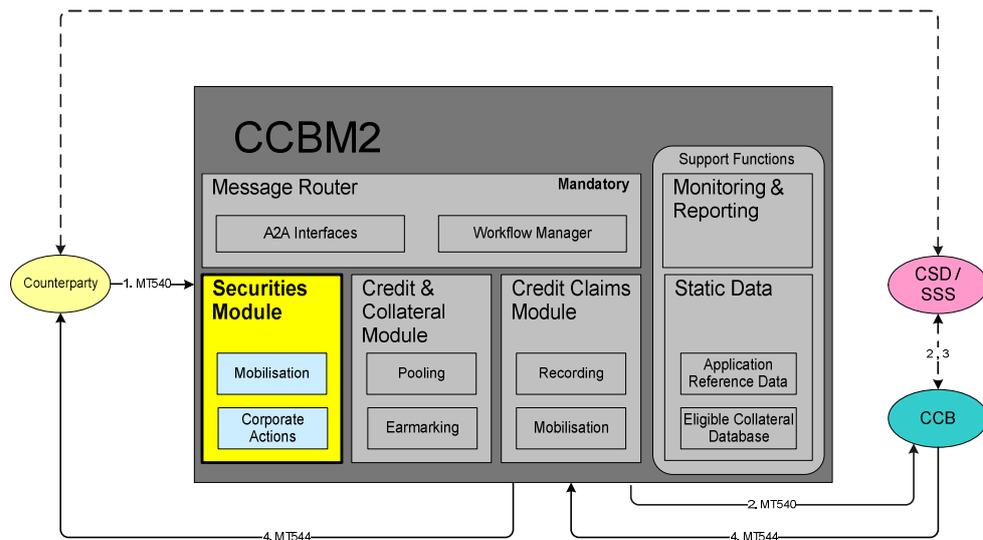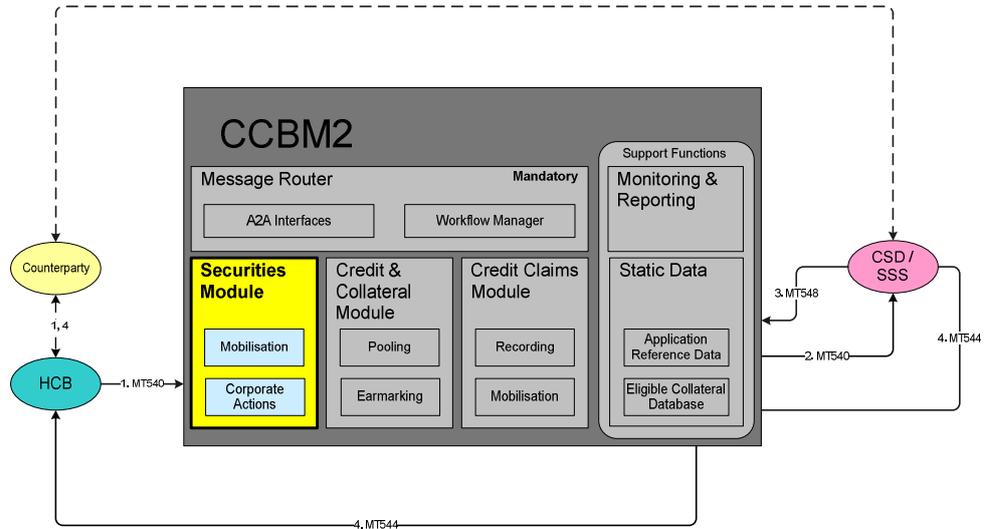| Stage	Nº	Description
Mobilisation	1	The counterparty sends a mobilisation instruction (FoP) to HCB.
		The HCB sends an MT540 to CCBM2.
Validation		The Securities Module performs eligibility checks and additional checks.
Sending instruction	2	CCBM2 sends an MT540 to SSS.
Matching	3	SSS sends an MT548 to CCBM2 immediately after receiving the instruction, and another MT548 when a matching occurs afterwards.
Settlement	4	SSS sends an MT544 (FoP) to CCBM2.
		CCBM2 sends an MT544 to the HCB.
		The HCB sends a settlement confirmation to the counterparty.

Note   All communication from/to external parties or other modules is done through the Message Router.

4.4.   Demobilisation

Demobilisation vs. mobilisation

The process of demobilising securities is very similar to the mobilisation process. However, when both legs of a repo transaction are managed by a single instruction, a separate demobilisation instruction is not necessary.

Check on mobilised securities

In case of a demobilisation of mobilised securities, CCBM2 needs to check whether:
- the position that is referred to exists in the Securities Module
- the global collateral position is sufficient in the Credit & Collateral Module (only for pledge and FoP repo)
- the separate cash part of the second leg of a FoP repo is executed before returning the securities.

To perform the check of the collateral position, CCBM2 always consults with T2 for the most recent information on the counterparty's cash position.

4.5. Custody functions

Overview

Introduction   This section describes the custody functions of CCBM2 for securities.

Contents   This section contains the following topics:

4.5.1. Corporate actions

Corporate actions

The Securities Module handles the corporate actions in the following cases:
- coupon payments
- redemptions (partial or full).

CCBM2 can handle several announcements on the same corporate action.

CCBM2 handles the corporate event payments, according to procedures and payment systems used by the various CSDs for this purpose.

CCBM2 participants

When collateral is used in a domestic context, and both HCB and CCB participate in CCBM2, the following process is applied:
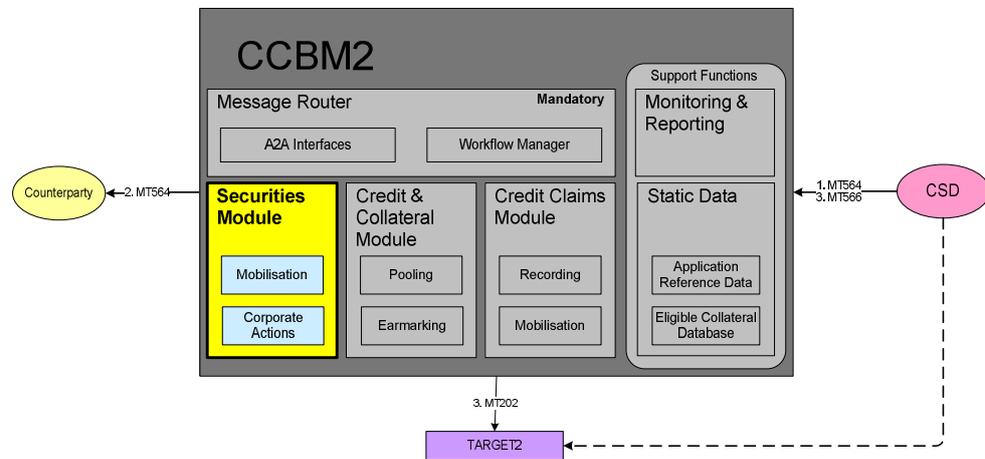
Corporate actions, Continued

Schematic overview

The process can be described as follows:

Stage	Time	Description
1	D_{ANN}	CSD announces (an update of) a corporate action to CCBM2 some time ahead of the payment date D (via MT564). Per corporate action, several announcements are possible.
2	D-x	CCBM2 reconciles the Static Data and collateral positions with the latest information, if any, it received from the CSD at the end of the xth day before D.
		CCBM2 reports differences to the responsible NCB (including cases where no or not enough information was given by the CSD or where the information in the Static Data was insufficient). If a difference occurs, the possibility exists to take corrective actions and to re-iterate the reconciliation process.
		CCBM2 sends an MT564 to the counterparties where the reconciliation has not revealed any differences and where all the necessary information is present. MT564 contains all data necessary to calculate the corporate action (e.g. interest rate, nominal amount for that counterparty at the end of D-x or D_{REC} if D_{REC} precedes D-x) as well as the resulting cash amount to pay.
	D-1	The processing of D-x is repeated until D-1 (each time an MT564 is received from the CSD).
	D_{REC}	Some days (often 1) before the payment date, the record date occurs: the securities positions within CSD and CCBM2 are recorded at the end of the day and will serve as the payment basis.
3	D	CSD does the payment to the relevant NCB in T2(S) or a local clearing system (sometimes confirmed by an MT566 to that NCB).
		CCBM2 reconciles the obtained payments with the expected payments as administered in CCBM2. Differences are reported to the responsible NCB who has to solve the problem before the processing can continue.
		CCBM2 instructs a transfer of the money, from the NCB to the counterparty.

Corporate actions, Continued

Non-CCBM2 participant

Some differences apply to the scheme above when either the HCB or CCB decide not to participate in CCBM2:

- only the HCB participates in CCBM2 (and the CCB does not)
  - Stage 1: CCBM2 receives all information about the corporate action from the CCB instead of the CSD
  - Stage 3: the CCB, instead of CCBM2, receives the money from CSD and transfers it to the HCB
- only CCB participates in CCBM2 (and the HCB does not)
  - Stage 3: CCBM2 instructs to transfer the money from the CCB to the HCB (via MT202 to TARGET2). Next, the HCB pays the counterparty.

4.5.2. Statement of holdings

Reconciliation   Every day reconciliation takes place between the data on securities positions which are obtained from the CSD (or the CCB outside CCBM2) and the own data managed in CCBM2. In case of differences, a report is produced.

Statement of holdings   A daily statement of holdings is available for all counterparties with outstanding positions (as far as the HCB is participant in CCBM2, otherwise that HCB receives the information from CCBM2).
This message contains also the collateral value of every position.

4.5.3. Tax reporting

Principle CCBM2 stores the incoming SWIFT messages concerning tax reporting formalities from the CSDs and CCBs outside CCBM2. This allows the relevant NCBs to follow up on the incoming messages.

5.   CREDIT CLAIMS MODULE

Overview

Introduction   The Credit Claims Module deals with recording, mobilisation and demobilisation of non-marketable assets (credit claims and RMBDs) that can be used as collateral in Eurosystem credit operations.

Contents   This chapter contains the following topics:

5.1. Module Presentation
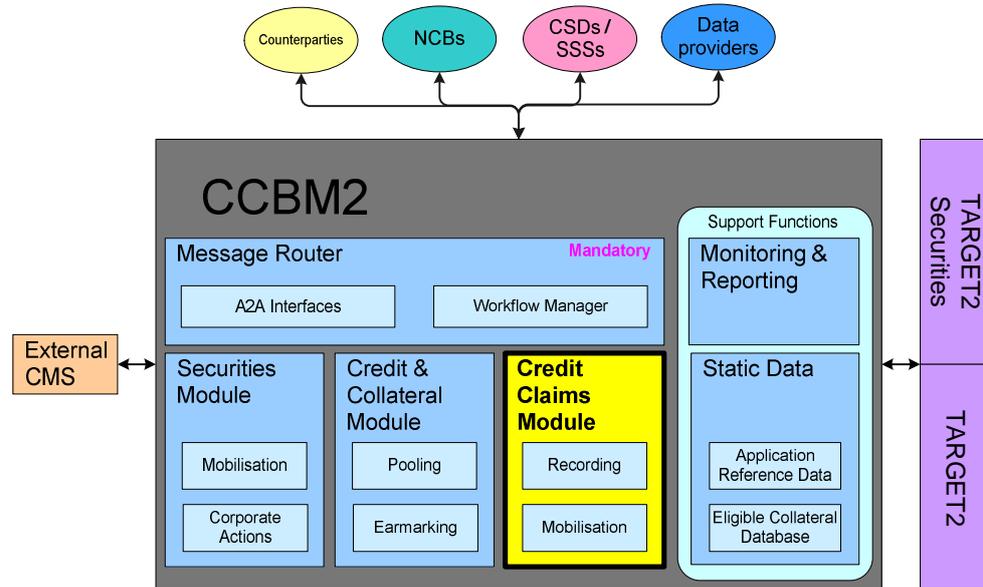
Optional Module

The Credit Claims Module is an optional module.

Relation to other modules

The Credit Claims Module closely interacts with:
- the Credit & Collateral Module for:
    - feeding the valuation and credit processes
    - exchanging messages with the external parties (via the Message Router)
- the Static Data Support Function for using the Eligible Collateral Database
- the Monitoring and Reporting Support Function.

The Credit Claims Module does not interact with the Securities Module.

5.2. Generalities

Mobilisation methods

The Credit Claims Module performs acceptance of non-marketable assets as collateral, both on a domestic and cross-border basis.

Counterparties can mobilise credit claims as collateral:
• on individual basis; or
• through running a bulk procedure.

RMBDs are used in physical form and are completed by the CBFSAI on the basis of an instruction from the issuer. The information is entered manually in CCBM2.

Legal procedures of mobilisation

Credit claims can be governed by different national legal regimes:
• the one of the credit claim agreement
• the one of counterparty
• the one of the debtor (or guarantor)
• the one of the creditor
• the one of the mobilisation agreement.

Eurosystem accepts a maximum of two different legal regimes when credit claims are mobilised as collateral. The table below illustrates how the use of domestic or cross-border eligible credit claims is determined:

Counter-party	Law of the credit claim agreement	Debtor	Creditor	Law of the mobilisation agreement	Use
Country A	Country A	Country A	Country A	Country A	Eligible domestic
		Country B	Country B	Country B	Eligible domestic
	Country B	Country B	Country B	Country A	Eligible cross-border
		Country A	Country A	Country B	Eligible cross-border
		Country C	Country C	Country B	Not eligible

Notification procedures

CCBM2 supports the two main legal procedures for notifying the debtor of credit claims:
• Register-like solutions: the recording and mobilisation of a credit claim in CCBM2 legally links the counterparty (a central credit register is currently used by 8 NCBs)
• According to the legal obligations in some countries, notifying the debtor ex-ante or ex-post is necessary when a credit claim is mobilised as collateral.

Generalities, Continued

Data input and consultation
Participating NCBs and their counterparties can consult the data they have access to and follow the processing of the instructions up in the Monitoring & Reporting Support Function.

Note   The Credit Claims Module also offers manual input of credit claims.

No cash flows
CCBM2 will not process cash flows for credit claims.

5.3. Mobilisation

Overview   This section describes the recording and mobilisation of non-marketable assets.

Contents   This section contains the following topics:

5.3.1. Introduction

Functionalities   The Credit Claims Module manages the different steps in the recording and
mobilisation process:
- recording in CCBM2
- validations
- receipt of collateral
- pricing.

**Processing
credit claims**   Credit claims can be processed in three ways:
- Domestic and cross-border mobilisation between two participating NCBs
  and their counterparties.
- Cross-border mobilisation with only the Home Central Bank (HCB)
  participating in CCBM2
- Cross-border mobilisation with only the Correspondent Central Bank
  (CCB) participating in CCBM2.

Important   If the Correspondent Central Bank (CCB) or Home Central
Bank (HCB) does not participate in CCBM2, the application is
fully compatible with the current CCBM procedures.

**Pledge and
assignment**   CCBM2 supports both the legal techniques of pledge and assignment of
credit claims.

5.3.2.   Recording

Recording and maintenance methods

The credit claims are recorded and managed through two different methods:
- Individual recording and update
  The counterparty reports a credit claim by sending a SWIFT message (MT598), via the secure internet connection or via manual input
- Bulk procedure
  The counterparty reports a number of credit claims using a file. The bulk procedure contains both recording and mobilisation of all the credit claims that are used as collateral. The bulk procedure is based on the cancel and replace principle.

Recording data

The counterparty has to hand over all necessary data for:
- the checks (e.g. eligibility checks, legal checks and close link checks)
- the receipt of collateral
- valuation.

Maintenance data

The counterparty has to report changes in the static data of a credit claim, e.g. decrease of nominal amount due to a reimbursement.

Documents

Depending on the country where the credit claim is issued, original contracts should be sent to the NCB for specific national legal requirements.

5.3.3. Validations

Eligibility checks

Before the credit claim becomes eligible, CCBM2 performs several eligibility checks, depending on the country where the credit claim is issued:

Check	Country specific
Type of debtor / guarantor: non-financial corporations, public sector entities, international or supranational institutions.	No
Minimum size of domestic credit claims	Yes (until end 2011)
Minimum size of cross-border credit claims	No
Location of debtor/guarantor (Euro area)	No
Credit Quality of debtor or guarantor in relation to the European Credit Assessment Framework (ECAF). At least single A or PD < 0,10% Use of four credit assessment sources: • External Credit Assessment Institutions (ECAI); e.g. Moody's, S&P • NCB's internal credit assessment system (ICAS); e.g. FR, DE • Internal ratings-based system (IRB) with supervisors validation • Rating tool of third party providers (RT) Note: For unrated Public Sector Entities (PSE), there is an implicit credit assessment for debtor or guarantors. This credit assessment is derived from the ECAI credit assessment of the central government of the country where the debtor or guarantor is located.	No
Close link (see Static Data)	No
Number of different laws not exceeding two, for: • counterparty • creditor • debtor/guarantor • credit claim agreement • pledge agreement or assignment.	No

Continued on next page

Validations, Continued

Additional checks

Depending on the country of issue, additional checks may be necessary to make the credit claim eligible, such as:
- (Physical) verification of existence of the credit claim
- Debtor notification (ex ante or ex post) or registration
- Receipt of pledge agreement
- No restrictions regarding mobilisation or realisation
- No restrictions relating to banking secrecy regarding debtor information.

Individual recording

When successfully validated, the Credit Claims Module acknowledges the recording of the credit claims. CCBM2 informs the counterparty of the validation result.

Bulk procedure

All the credit claims which were successful validated, are mobilised without further notification. CCBM2 informs the counterparty about all the credit claims which have not met the validation criteria.

Not all validations are reiterated for earlier recorded credit claims.

5.3.4. Receipt of collateral

Individual recording

The process of mobilisation is described below:

Stage	Description
1	The counterparty sends an MT540 for mobilisation.
2	CCBM2 sends: • an MT544 as acknowledgement of a mobilisation, or • an MT548, if a mobilisation is rejected by CCBM2.

Bulk procedure

All the recorded (eligible) credit claims are automatically mobilised as collateral.

Accounting records

Each time a mobilisation is successfully processed the Credit Claims Module updates the corresponding accounting records.

CCB and HCB in CCBM2

If for a cross-border settlement both the HCB and CCB participate in CCBM2, the Credit Claims Module will update all accounting records, i.e. from the CCB and HCB.

CCB outside CCBM2

If for a cross-border settlement the HCB participates in CCBM2 and the CCB not, the Credit Claims Module will update accounting records of the HCB.

HCB outside CCBM2

If the CCB participates in CCBM2 and the HCB not, the Credit Claims Module will update after the receipt of the confirmation of settlement from the HCB the accounting records of the CCB.

5.3.5. Use Case 1: Domestic and cross-border mobilisation between two participating NCBs

Illustration   The image below describes the flow of the mobilisation of a credit claim when:

- collateral is used in a domestic or cross-border context
- both NCBs (HCB and CCB) participate in CCBM2
- SWIFT or Web based communication channels are used (the example show the use of SWIFTFin messages).
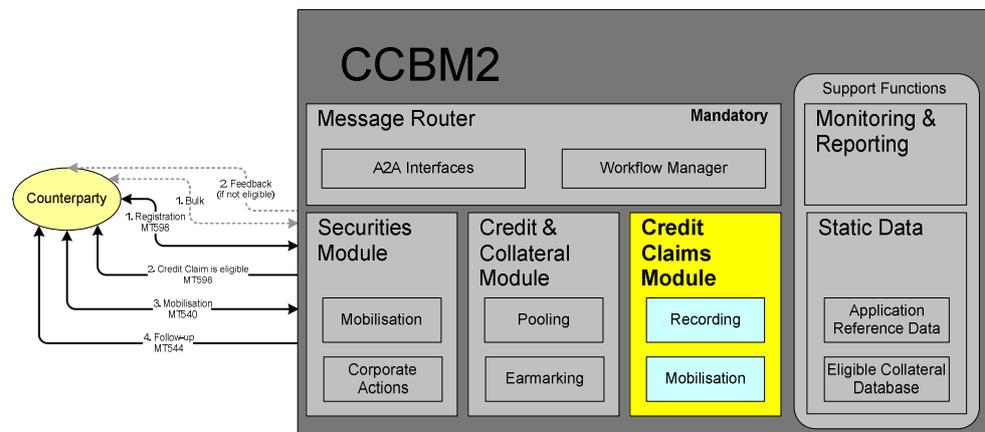
Note   All communication from/to external parties or other modules is done through the Message Router.

Note   The process of demobilisation is described separately.

Use Case 1: Domestic and cross-border mobilisation between two participating NCBs, Continued

Credit claim flow

Four major phases can be distinguished when describing the flow of a credit claim mobilisation. Each phase has a number of subphases:

Phase	N^o	Description
Recording	1	The credit claim (or changes) is sent to the Credit Claims Module and the CCB by: • the counterparty who sends an MT598 (individual recording) • a counterparty who reports and mobilises a list of credit claims (bulk recording). Result: All static data of the credit claims are stored in the Non-Marketable Assets Database.
Validations	2	CCBM2 checks the eligibility and the additional legal requirement of the credit claim.
		CCBM2 sends an MT598 to the counterparty to indicate whether the credit claim is valid for mobilisation or not.
		In case of a bulk procedure, the counterparty is informed on the credit claims which are not eligible.
Mobilisation	3	The counterparty sends a mobilisation message (MT540) to CCBM2 to request a mobilisation.
		For bulk procedure no specific mobilisation instruction is required.
		CCBM2 checks whether the requested credit claim is eligible: • if eligible, the collateral value of the credit claim will be calculated • if not, the requested mobilisation will be rejected
Follow-up	4	The total collateral value of the counterparty's pool is updated with the collateral value of the mobilised credit claim(s).
		CCBM2 sends an MT544 to the counterparty to acknowledge individual mobilisation.

5.3.6. Use Case 2: Cross-border mobilisation when only the HCB participates in CCBM2

Situation

The image below describes the flow of the mobilisation of a credit claim when:

- collateral is used in a cross-border context
- only the HCB participates in CCBM2 (the CCB has its own collateral management system)
- SWIFT or Web based communication channels are used (the example show the use of SWIFTFin messages).

Role of the CCB

When the Correspondent Central Bank (CCB) does not participate in CCBM2, the counterparty or its HCB has to send to CCBM2 and to the CCB:

- all static data on the credit claim
- original contracts for specific national legal requirements.

Illustration

The image below describes the flow of the mobilisation of a credit claim when only the Home Central Bank (HCB) participates in CCBM2:

Note   All communication from/to external parties or other modules is done through the Message Router.

Use Case 2: Cross-border mobilisation when only the HCB participates in CCBM2, Continued

Process   Four major phases can be distinguished. Each phase has a number of subphases:

Phase	N°	Description
Recording	1	The credit claim (or changes) is sent to Credit Claims Module and the CCB by: • the counterparty who sends an MT598 (individual recording) • a counterparty who reports and mobilises a list of credit claims (bulk recording). Result: All static data of the credit claims are stored in the Non-Marketable Assets Database.
Validations	2	CCBM2 checks the eligibility and the additional legal requirement of the credit claim.
		An MT598 is sent to the counterparty to indicate whether the credit claim is valid for mobilisation or not.
		In case of a bulk procedure, the counterparty receives information on the non-eligible credit claims.
		The CCB performs eligibility checks and checks legal requirements.
Mobilisation	3	The counterparty sends a mobilisation (MT540) message to CCBM2 to request a mobilisation.
		CCBM2 checks whether the requested credit claim is eligible or not and sends the CCB a mobilisation message for each credit claim.
Follow-up	4	The CCB checks the eligibility of the credit claim and sends a confirmation message to CCBM2 if the credit claim is eligible.
		The total collateral value of the counterparty's pool is updated with the collateral value of the mobilised credit claim(s).
		CCBM2 sends an MT544 to the counterparty to acknowledge individual mobilisation.

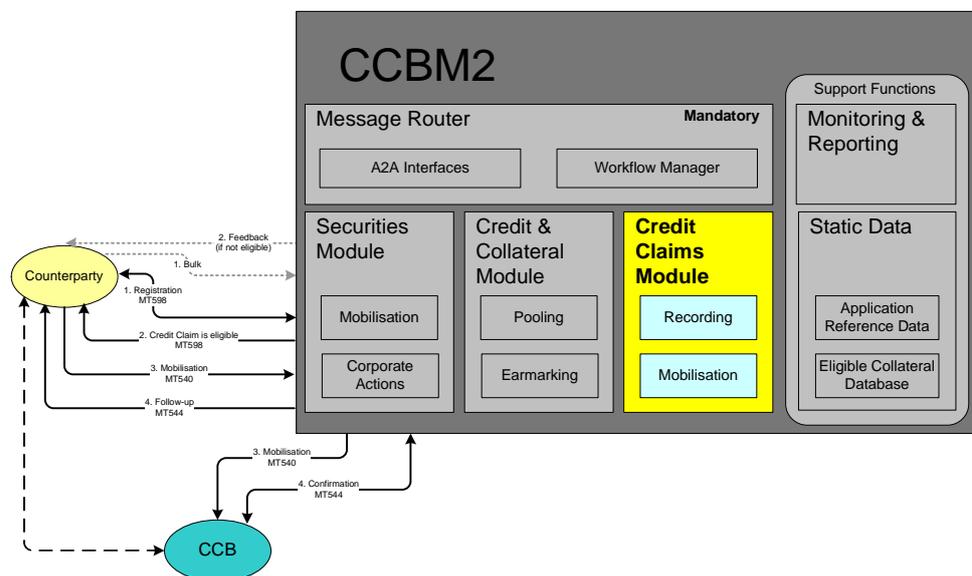## 5.3.7. Use Case 3: Cross-border mobilisation when only the CCB participates in CCBM2

Situation

The image below describes the flow of the mobilisation of a credit claim when:
- collateral is used in a cross-border context
- the CCB participates in CCBM2. The HCB has its own collateral management system
- SWIFT or Web based communication channels are used (the example show the use of SWIFTFin messages).

Illustration

Note   All communication from/to external parties or other modules is done through the Message Router.

Use Case 3: Cross-border mobilisation when only the CCB participates in CCBM2, Continued

Process   Four major phases can be distinguished. Each phase has a number of subphases:

Phase	N^o	Description
Recording	1	The counterparty sends an MT598 to CCBM2. <u>Result:</u> All static data of the credit claims are stored in the Non-Marketable Assets Database.
Validations	2	CCBM2 checks the eligibility and the additional legal requirements of the credit claim.
		An MT598 is sent to the counterparty to indicate whether the credit claim is valid for mobilisation or not.
Mobilisation	3	The HCB of the counterparty sends a mobilisation message (MT540) to CCBM2.
		CCBM2 checks whether the requested credit claim is eligible: • if eligible, the credit claim is added to the HCB's position • if not eligible, CCBM2 will send a rejection message to the HCB.
Follow-up	4	CCBM2 sends a confirmation message (MT544) to the HCB.

5.4. Demobilisation

Check on pledged credit claims

The process which has to be applied in case of credit claims demobilisation is very similar to the mobilisation process.
In case of a demobilisation of pledged credit claims, checks need to determine whether:
- the position that is referred to actually exists in the Credit Claims Module, and
- the global collateral position is sufficient in the Credit & Collateral Module.

To perform the check of the collateral position, CCBM2 always consults with T2 for the most recent information on the counterparty's cash position.

6. STATIC DATA

Overview

Introduction

This chapter describes the general functionalities of the Static Data Support Function.

This particular function provides the necessary tools for the management of two main data groups, namely:

- Application Reference Data
- Eligible Collateral Database, which contains data on:
    − Marketable assets
    − Non-marketable assets.

Contents

This chapter contains the following topics:

6.1. Presentation
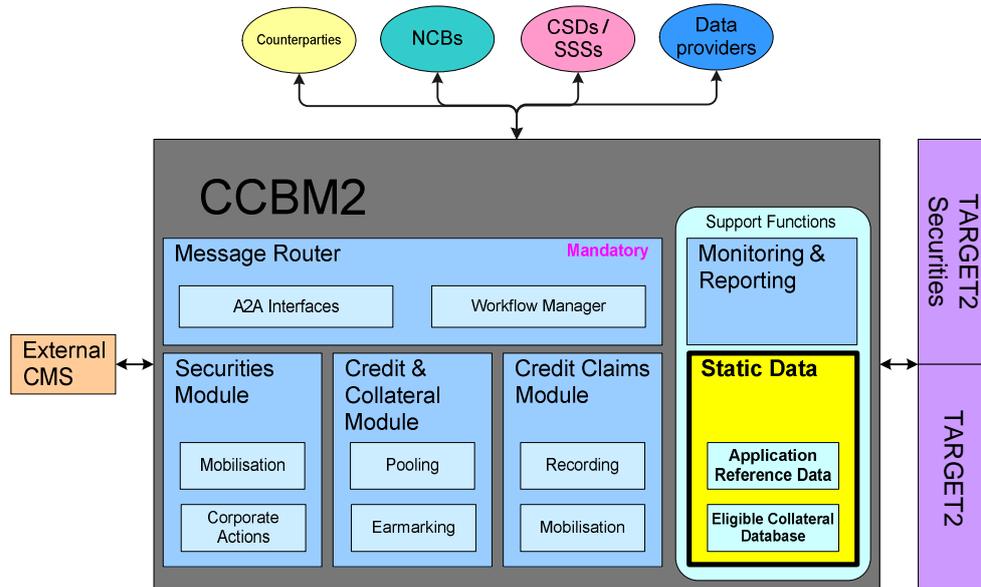
The Static Data Support Function is not mandatory as such, but is embedded in the CCBM2 functionality and will automatically be implemented when a CCBM2 module is chosen.

It serves as a central repository of referential data available to the CCBM2 modules.

6.2. Generalities

Decentralisation CCBM2 in general and the Static Data Support Function in particular, respect the principle of decentralisation of the execution of the monetary policy: each participating NCB remains responsible for the management of its own static data. The common data are maintained/updated by CCBM2.

Data consultation Participating NCBs and their counterparties can consult the data they have access to and follow the treatment of the instructions in the Monitoring and Reporting Support Function.

Data management To manage all reference data, five generic functions are available:
- Consultation of lists and detail data
- Creation of a new record
- Update of a record
- Deletion of a record
- Validation of the updates.

Note • Historic data with validity period are stored
- Automatic data flows are available through generic interfaces for high volume static data

Validation of the updates The four eyes principle is applied to key information. The Static Data Support Function maintains a list of data that need validation by another user before creation, modification or deletion to become effective. This list of information needing validation by another user can eventually be different for each participating NCB.

6.3. Application reference data

Overview

Introduction   The Static Data Support Function allows the management of the different reference data used throughout the application. This section explains how reference data are maintained in the Static Data Support Function.

Contents   This section contains the following topics:

6.3.1. Reference data on actors

Different Actors The Static Data Support Function contains lists of all:
- National Central Banks of the ESCB
- Counterparties eligible for monetary policy operations
- Third parties (debtors and issuers of non-marketable assets, guarantors of marketable assets)
- Rating Agencies
- Acceptable markets (regulated or non-regulated markets accepted by the ESCB)
- Central Securities Depositories (CSDs) and Securities Settlement Systems (SSSs) fulfilling the ECB's minimum standards.

Note
- Part of the data on counterparties is imported from the MPEC database managed by the ECB. An incoming interface is available to load these data.
- The unique identification of the third parties among the Euro Area requires special attention.

Common general data For each of the different actors, a set of general data needs to be stored, namely:
- identification codes:
  - VAT Nr
  - Bic code/ MFI ID code
  - Other identification codes
- denomination
- location information
- contact information
- responsible NCB for maintaining the data on the actor

Reference data on actors, Continued

Specific data   In addition to the general data, the following specific data need to be stored on each party. The list of attributes given below is not exhaustive.

Actor	Specific data to be stored
NCBs	• Collateral Management System (Pooling / Earmarking / Both) • Mobilisation technique (Pledge / Repo / Both) • Minimum nominal amount for credit claims • Lists of used CCBM2 modules
Counter-parties	• Main credit assessment source for credit claims (ECAI, ICAS, IRB, RT) • Alternate credit assessment sources + business case on which the request for using an alternate credit assessment source is based • Credit assessment sources submission date • Certification information (e.g. last self-certification date for credit claims) • Qualified Intermediary info • Status • MFI ID code
Third parties	• Entity type (corporate, PSE, central government, credit institution, ...) • Identification of the main activity (PSE, NACE, ...) • Public Sector Entity Class (PSE1 to PSE3) • Long term rating + source
Rating Agencies	• Mapping of their ratings with the harmonised rating scale
Acceptable Markets	(only recurrent general data)
CSDs / SSSs	• Accepted links with other SSSs: Eligible links between SSSs, usable for the cross-border transfer of marketable assets • Participation in T2S

Continued on next page

Reference data on actors, Continued

Check on close links

CCBM2 offers functionalities for checking the close links between counterparties and the issuers / guarantors / debtors of marketable and non-marketable assets.

Counterparties are not allowed to provide an NCB with:

- underlying assets that were issued or guaranteed by the counterparty itself
- underlying assets of which the issuer, debtor or guarantor is an institution with which the counterparty has a close link.

CCBM2 remains flexible with respect to changes in this framework

Each NCB is responsible for maintaining the close links information on its counterparties. The close links need to be checked:

- in real time before accepting an asset as collateral (ex-ante check)
- on a regular basis for the assets already used as collateral (ex-post check).

Note   The CCBM2 function of checking for close links is a complementary function relating to the fulfilment by the counterparty of its obligation not to submit collateral securities bearing close links.

Important   Close links data can be stored in CCBM2. The close links database contains a history of the relations between:

- counterparties identified by their BIC code, and
- the linked third parties identified by their unique identification number.

The final outcome depends on future decisions in this area.

6.3.2. Administration data

Introduction   Administration data used throughout the application are maintained in the Static Data Support Function. These data are different lists of codes and their description, parameters, ...

Calendar   A reference calendar contains:
- the legal holidays in the different countries of the Eurosystem
- the tender operations calendar
- the Target2 calendar
- ...

Fees   The Static Data Support Function provides the information required for the calculation of the fees that will be billed.

Payment paths   The lists of the different cash and securities accounts of the counterparties and NCBs used for collateral operations are maintained in CCBM2.
These accounts are used for:
- receiving / returning securities
- paying coupons and redemptions
- executing credit operations
- …

Exchange rates   The Static Data Support Function offers the possibility to maintain exchange rates between:
- the Euro and other currencies
- the Euro and the legacy currencies.

An open interface allows the import of daily exchange rates from an external data provider.

Administration data, Continued

Application Parameters

General system parameters, possibly with a different value per participating Central Bank, are managed in the Static Data Support Function. The offered solution allows to easily creating new parameters.

Examples of such parameters are:
- The trigger point for margin calls
- The threshold for price variation before raising a warning
- The initial margin, the threshold for updating the credit opening in TARGET2.
- The business hours of each NCB

Concentration Limits

The parameters allowing the Credit & Collateral Module for checking the concentration limits are maintained in the Static Data Support Function. Concentration limits should be applicable at the level of individual counterparties, limiting the use as collateral of certain groups of assets. For example:
- Limits on issuers / issues
- Limits on asset types.

CCBM2 allows the parameters to be updated in a flexible way.

General reference tables

The Static Data Support Function contains different general reference tables:
- Country ISO Codes
- Currency ISO Codes
- External pool types (type of amount of collateral held and valued outside the CCBM2 system)
- Credit freezing type
- Interest basis (30/360, ACT/360, ACT/ACT)
- Asset type (bond, medium-term note, credit claim, ...) + concentration limit per asset type
- Coupon type (zero, variable, fixed, inverse floater)
- Coupon frequency (monthly, quarterly, ...)
- Third party type (central bank, central government, corporate, credit institution, ...)
- Liquidity class of marketable asset (1 to 4)
- Quotation frequency (daily, weekly, ...)
- Asset Status
- Governing law type for credit claims (counterparty, debtor, creditor, ...)
- Reimbursement type (at maturity, partial redemption, pool factor)
- …

6.3.3. Authorisation and auditing

User Authorisations

All information stored in CCBM2 is subject to access right limitations, when users request an insert, update, delete or consultation.

Audit trail

Much of the information stored in the CCBM2 application is sensitive. All changes (creation, update, deletion) to this type of information are tracked with a timestamp. The Static Data Support Function allows maintaining the list of information that needs to be audited.

6.4. Marketable assets

Overview

Introduction   The Static Data Support Function allows the management of all information related to the marketable assets that can be used as collateral in Eurosystem liquidity-providing operations.

Contents   This section contains the following topics:

6.4.1.   Characteristics of the marketable assets

Static data synchronised with EADB

The following core data are maintained for the debt instruments and are synchronised with the ECB's Eligible Assets Database (EADB):
- ISIN code
- Long/short term rating + source
- Country of location / registration
- Coupon structure (frequency, type, rate)
- Currency of denomination
- Date and Time of entry
- Link to guarantor and/or issuer
- Identification of Sender
- Issuance date
- Liquidity class (1 to 4)
- UCITS compliant (true / false)
- Maturity date
- Outstanding Nominal Value
- Price quotation type (Unit price, % of nominal value, yield, ...)
- Link to reference market
- Quotation frequency
- Asset Status ((hypothetical) eligible, matured, deleted) + comments
- Valuation haircut ECB/Add-on to haircut
- Harmonised rating scale level

In case additional fields become necessary or existing ones need to be amended, this can be incorporated flexibly in CCBM2.

Static data not synchronised with EADB

The following static data are not synchronised with EADB, but also need to be maintained, mainly for theoretical valuation reasons:
- Asset Name
- Acknowledgement flag (true / false)
- Interest basis (30/360, ACT/360, ACT/ACT)
- Original nominal value
- Reference index for coupon calculation
- Spread to reference index
- Number of spot days
- ABS data:
  - Clean up call value
  - CPR rate
  - Series of flags: Callable, Still Callable, Putable, Sinkable, Perpetual, Soft Call, RTG Sensitive, Reverse convertible, Fix to float, Float to fix
- Pool factor
- Inflation index rate
- Interest rate
- Coupon payment dates

6.4.2. Synchronisation with EADB

Introductory remark

The below description of the synchronisation mechanism with EADB is based on the current state of play. In case this process is updated, CCBM2 will comply with the new version of the process.

For participating NCBs, CCBM2 optionally offers a tool for reporting eligible assets to the EADB of the ECB.

Process

The Eligible Assets part of the ESCB internal data exchange system is processed daily in three stages:

	Stage	Description
1	(ECB) acquisition	An NCB sends a request to the ECB to either: • create or update an asset • delete an asset.
2	(Acquisition) acknowledgement	The ECB sends an acknowledgement to the sending NCB.
3	(ECB) dissemination	The ECB disseminates to all NCBs an updated list of the eligible assets, containing: • all matured assets; • all deleted assets; • all new or updated assets; • all reassigned assets (change of sender). For participating NCBs, CCBM2 takes on board the list from the ECB.

Monthly list

Each month, the ECB disseminates a fully updated list of the current assets, consisting of three separate files:
• one only containing eligible assets
• one only containing non eligible assets
• one only containing potentially eligible assets.

6.4.3. Elements for asset valuation

Collateral pricing

The eligible marketable assets used as collateral need to be priced for valuation reasons.

Generic interfaces

The Static Data Support Function offers generic interfaces for loading and storing:
- market prices from different price providers (WM, Bloomberg, ...)
- pool factors
- inflation indexes.

<u>Note</u>   The valuation itself is executed in the Credit & Collateral module.

Pool factor

The valuation of some assets depends on the pool factor: the outstanding principal amount divided by the original principal amount. The result is expressed as a decimal.

Confidence control

To avoid loading incorrect data, a confidence control will be performed, based on:
- the variation percentage of each new price
- the pool factor
- the inflation index.

Asset price

The value of an eligible marketable asset is calculated including accrued interests and on the basis of:
- the most representative price on the business day preceding the valuation date
- the last trading price, when no representative price is available on the business day preceding the valuation date
- a theoretical price:
  - when there is no market reference price available
  - when the obtained reference price is older than five days or has not moved for at least five days

For each eligible marketable asset, the Eurosystem defines the most representative price source to be used for the calculation of the market value, and possibly a ranking of secondary price sources in case the primary price source is not suitable. Market prices are uploaded automatically into the system if available. Quality checks can be defined that send warning messages to the responsible unit within the Eurosystem. This responsible unit may always overwrite manually the prices in the system.

Elements for asset valuation, Continued

Payments schedules

Payment schedules for the coupons and redemptions of marketable assets are maintained in CCBM2, derived from the static data of the assets.

Price Source Priority

A priority must be defined between the different price sources and price types. To reach a level playing field for counterparties, CCBM2 applies the same valuation to a given asset, whichever NCB granting the credit.

Note   A same asset provides then the same liquidity, whichever NCB granting the credit. If no valid market price can be obtained, a theoretical valuation process is initiated.

Valuation hubs

For marketable assets, the theoretical valuation framework currently relies in particular on two valuation hubs, operated by:
- the Deutsche Bundesbank for assets other than asset-backed securities ("non-ABS"), and
- the Banque de France for asset-backed securities ("ABS").

Interface   CCBM2 offers the functionalities to interface with these valuation hubs, based on the ECB specified standards (EXDI). For other theoretical pricing sources (in-house pricing models of some NCBs or external service providers), a generic interface is present.

Theoretical price calculation

If no valid market price can be obtained, the theoretical valuation process contains three consecutive steps, namely:

	Stage	Description
1	Price "cleansing"	CCBM2: • identifies the assets that need to be priced theoretically because of the lack of a reliable market price ("price staleness check"), and • initiates a timely theoretical valuation.
2	Demand for theoretical pricing	According to directions given by the responsible NCB, the list of identified assets is sent to the appropriate valuation hub or another theoretical price source by means of the transfer method specified by the ECB (EXDI).
3	Theoretical Price Upload	Theoretical prices calculated by the valuation hubs or other sources of theoretical valuation: • are loaded in CCBM2 • are checked on consistency. (A warning appears if daily, weekly or monthly variation of the price is higher than a percentage given in system parameters).

Elements for asset valuation, Continued

ABS Static ABS data need to be sent to the valuation hub previous to the demand for theoretical pricing.

6.4.4. Establishment of high credit standards

Purpose The Static Data Support Function allows the control of the high credit standards for marketable assets according to the set of criteria described in the General Documentation, namely:
- ECAI credit assessment
- Euro area public sector issuers or guarantors
- Euro area non-financial corporate issuers or guarantors

ECAI credit assessment The available ECAI ratings of the marketable assets, for the reporting of which participating NCBs are responsible, are stored in CCBM2:
- A generic interface allows the loading of ECAI rating information from external sources
- Any update in the first best rating triggers the eligibility checking of the concerned asset. The changes in the eligibility of assets are synchronized with EADB .

Public sector issuers or guarantors The credit assessment of the central governments of the Euro area are stored in the Static Data Support Function. Any update in the first best rating triggers the eligibility checking of all the assets for which the implicit credit assessment is derived from this rating, for as long as a CCBM2 participating NCB is responsible for the reporting of these assets.
The changes in the eligibility of these assets are then synchronized with EADB.

Non-financial corporate issuers or guarantors If the high credit standards for marketable assets issued / guaranteed by non-financial corporations located in the euro area cannot be established on the basis of an ECAI credit assessment, the ECAF rules for credit claims are applicable. The Static Data Support Function allows for the recording of the required information for eligibility checking of these assets: probability of default attributed by the counterparties IRB, NCBs' ICAS, RT.
The changes in the eligibility based on the ECAF rules for credit claims are not synchronised with EADB.

6.5. Non-Marketable Assets

Overview

Introduction   The Static Data Support Function allows the management of all information related to the two types of non-marketable assets that can be used as collateral in Eurosystem liquidity-providing operations: credit claims and non-marketable retail mortgage-backed debt instruments (RMBDs).

Contents   This section contains the following topics:

6.5.1. Characteristics of the credit claims

Purpose   The Static Data Support Function stores all static data of credit claims.

Data to be stored

The following data on credit claims could be stored:
- Asset Identification code (Credit Claim ID)
- Type of credit claim (e.g. leasing claims, factoring claims)
- Status
- Issuance date
- Maturity date
- Currency (only EUR allowed at this time)
- Loan agreement language
- Links with counterparty, guarantor, debtor
- Redemption schedule
- Laws governing the credit
- Credit assessment source used by the counterparty for the eligibility of the credit claim
- Probability of default, rating or PSE type, depending on the credit assessment source
- Harmonised Rating Scale level
- Interest rate data: type, value, periodicity, interest formula
- Nominal amount at issuance
- Outstanding amount
- Theoretical price
- Haircut calculated based on the residual maturity, interest rate type and valuation type (outstanding, theoretical)
- Debtor's name
- Debtor's address (or tax code)
- Debtor class/sector
- Debtor residence
- Type of non-marketable asset (e.g. credit claim, RMBD)
- Coupon type (fix, floating, zero coupon).

Note   The final harmonised set of static data needs to be defined taking into account the necessity to identify the credit claim, the national legal requirements and availability. Some data might be mandatory and other data might be country-specific.

6.5.2. Elements for credit claims pricing

Methods of pricing

The collateral value is calculated in the Credit & Collateral Module. The Static Data Support Function provides the relevant data, including prices, for the Credit & Collateral Module.

CCBM2 supports two methods for the pricing of credit claims:
• the theoretical pricing
• the valuation based on the outstanding amount.

The relevant prices are stored in the Static Data Support Function.

Daily theoretical price

The theoretical price is calculated by the responsible NCB. The theoretical valuation approach for fixed and floating-rate credit claims without options is the net present value. Credit claims with optional features can also be valued by NCBs if the ECB has accepted the theoretical valuation approach. Theoretical prices may also be calculated by a valuation hub. CCBM2 provides theoretical price calculation services. Theoretical price calculation of credit claims is subject to the future decisions taken by the relevant bodies by the end of the temporary period (2012)or at an other point in time.

Currently, the use of theoretical pricing is not mandatory. If the data for theoretical price calculation are not available or the responsible NCB chooses to do so, the collateral value will be based on the outstanding amount of the credit claim minus the haircut.

Theoretical pricing process

The pricing process, if a theoretical price provided from outside CCBM2, is chosen, is explained below:

Stage	Description
1	CCBM2 sends a file to the responsible NCB to calculate the theoretical price of the credit claim.
2	The responsible NCB responds by sending a file with the theoretical price of the requested credit claim.
3	The theoretical price of the credit claim is stored in the Eligible Assets Database and becomes available for processing by the Credit & Collateral Module.

6.5.3. Characteristics of the RMBDs

Introduction

Irish Mortgage Backed Promissory Notes (MBPNs) are currently the only instrument contained in the RMBDs asset class. MBPNs are transferable non-marketable debt instruments in the form of promissory notes, which are backed by a pool of mortgage loans. The management of the underlying pool of mortgage loans in terms of eligibility, valuation, legal aspects, ... is not in the scope of CCBM2. The Static Data Support Function only stores the static data of the promissory notes that will be earmarked to a specific credit operation in the Credit & Collateral Module.

Data to be stored

The following data on the promissory notes need to be stored:
- Promissory note Identification code (ORN)
- Link with counterparty (issuer)
- Issuance date
- Maturity date (matching that of the operation in respect of which the MBPN is presented as collateral)
- Currency (only EUR allowed at this time)
- Amount of liquidity provided
- Maturity amount (value to be paid by the counterparty on maturity date of the credit operation)
- Interest rate applicable to the relevant credit operation
- Nominal amount incorporating the appropriate haircut for RMBDs

7. MONITORING & REPORTING

Overview

Introduction   This chapter describes the CCBM2 tools for monitoring and reporting.
It explains how CCBM2 users interact with the system, how reporting is
done and it describes the reporting facilities of the CCBM2 Statistical and
Reporting Database (SRDB) in greater detail.

Contents   This publication contains the following topics:

7.1. Presentation
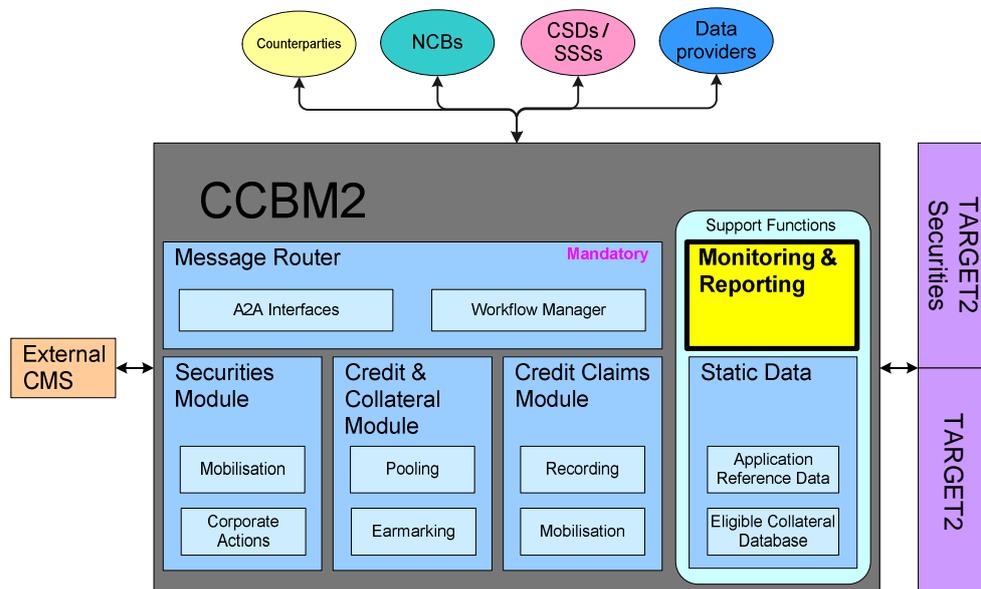
Automatic functionality

The Monitoring & Reporting Support Function is not mandatory as such, but is embedded in the CCBM2 functionality and will automatically be implemented when a CCBM2 module is implemented.
This means that all participating NCBs and their counterparties have the tools to:
- follow up their credit and collateral business managed in CCBM2
- enter and maintain static data manually
- enter credit and collateral instructions manually.

Interaction with other modules

The Monitoring & Reporting Support Function interacts with all CCBM2 modules. It allows to consult and administer the information of the:
- Static Data Support Function
- Credit & Collateral Module
- Securities Module
- Credit Claims Module
- Message Router.

Note   The Monitoring & Reporting Support Function only covers the mandatory module and the optional modules an NCB has chosen.

7.2.   Generalities

Secured access   Each user has its own security profile and access rights to the Monitoring & Reporting Support Function.
The user authorisations are available in the Static Data Support Function.

Different user groups   Three main user groups are defined. Within each group, several profiles are available.

Group	Authorisations
NCB users	Input, monitoring and reporting of: • their own data, and • the credit and collateral data of their respective monetary policy counterparties.
Counterparties	Input, monitoring and reporting of their own credit and collateral data. In this group are also included other users on behalf of the counterparties.
CCBM2 operators	Access to operating data, according to their specific needs.
ECB	Monitoring and reporting of all data needed for implementation of monetary policy, risk management, collateral monitoring or analytical purposes.

Data privacy protection   Within CCBM2, data are strictly segregated. Each NCB user and counterparty can access their own data only.

7.3. Input and monitoring

Web Interface All users have a U2A Web Interface to fulfil their own business needs. This allows them to enter and consult the data they have access to on-line, in real time and in a secure way.
The Web Interface can be customised according to the security and functional requirements of each user profile.

NCB users The interactive Web Interface enables NCB users to:
- consult historical data
- consult data on the day-to-day credit and collateral management and monitoring such as eligible assets, collateral transactions, coupon payments etc. including their status of processing
- insert/update/delete static and transactional data - according to predefined security and permission rules
- enter credit and collateral transactions on behalf of their counterparties
- make print screens and export data to spreadsheets or PDF-documents
- depend on it as a back-up for input of credit and collateral transactions if the SWIFT connection between a counterparty and the CCBM2 platform is down
- manually enter tender allotment results and bilateral operations.

Counterparties The counterparties can subscribe to the Web Interface so they can consult their credit and collateral data.
However, they only have a functional subset of the screens of the NCB users. They are subject to separate security requirements.

The different counterparties can use the Web Interface to:
- consult their credit and collateral business
- consult historical data
- key in collateral transactions, working on a consult and transaction basis (e.g. for small credit institutions not using SWIFTNet FIN services)
- depend on it as a back-up for input of credit and collateral transactions if for instance, the SWIFTNet FIN connection at the counterparty premises is down
- consult some static data like the eligible securities (envisaged, but not confirmed yet).

CCBM2 operators In the Web Interface, the CCBM2 operators have a specific subset of screens available for their business needs:
- the operation of CCBM2
- support and helpdesk for the NCBs that use CCBM2
- CCBM2 monitoring.

Input & Monitoring, Continued

ECB The interactive Web Interface enables the ECB to:
- Consult historical and day-to-day data that is needed for risk management purposes, i.e. data allowing to assess credit, liquidity, concentration-related risks resulting from Eurosystem credit operations, data necessary to perform analyses on specific assets, asset types, features of assets that are of relevance from a risk perspective; data allowing to assess the adequacy of risk control measures; any other data that might be of relevance to conduct ad-hoc risk analyses
- Consult historical and day-to-day data on individual counterparty and individual asset level that is needed to monitor the use-of-collateral to the extent necessary for the implementation of monetary policy and to conduct analytical studies
- Export the data for further analysis into an excel format.

7.4. Reporting

Overview

Introduction   The reporting function comprises two types of reporting:
- predefined reports from the production database. These fulfil the needs of NCB users and counterparties for the day-to-day management of their credit and collateral
- flexible reporting possibilities on data of previous days coming from the Statistical & Reporting Database (SRDB). These fulfil the needs which arise from non-time critical reporting such as statistical needs, historical views, input for risk or other analyses etc.

Contents   This section contains the following topics:

7.4.1. Reporting on the production database

Characteristics   Reporting on the production database is performed by means of:
- the Web Interface, which is available to all users
- a set of pre-defined printed reports, which are available to NCB users
- data files, which are available to NCB users.

Reporting via the Web Interface   The Web Interface allows the visualised data to be exported to:
- PDF documents, or
- spreadsheets (Excel).

Reporting via predefined printed reports   The CCBM2 same-day reporting provides a set of predefined printed reports which are not visualised in the Web Interface.
This reporting is intended for the NCB users to support their day-to-day credit and collateral management business processes.

Examples   • a listing of all currently collateralised assets with their value ordered per asset type for all counterparts of an NCB.
- forecasts, e.g. future value of specific assets or of the collateral stock

Data files   CCBM2 supports accounting and tax reporting requirements by delivering data files which contain all the detailed data of every relevant related event in CCBM2. NCBs can fully exploit these data files in their own applications for accounting and tax reporting requirements.

7.4.2. Reporting from the SRDB

Reporting database

CCBM2 has a Statistical & Reporting Database (SRDB) for flexible and customisable reporting purposes.
The SRDB is fed daily with a transfer of the operational database after the completion of the end-of day procedure.

Examples of SRDB functionalities

SRDB functionalities are for example:
- the NCB statistical reporting to the ECB
- a long-term, historical view of all the data which are related to the collateral provision by NCBs
- an instrument for risk management activities and for analysing and monitoring the collateral activity by the NCBs and by the ECB
- ex-post close link check
- information for billing and fee calculation
- etc.

Future requirements

If required, data from other sources than CCBM2 can be integrated into the SRDB. It is designed in such a way that it offers all the required flexibility to meet quickly changing reporting and analysis requirements.

Accessibility

An NCB can only access its own data and its counterparties' data.
The ECB has access to the data in the SRDB which are required to execute its Risk management, use-of-collateral monitoring and the other analytical activities.

Managed reporting environment

The NCBs and the ECB are able to exploit information in the SRDB through a web based business intelligence environment.
This environment will comprise:
- the execution of a number of predefined fixed reports which are automatically refreshed on a daily basis
- the execution of a number of predefined flexible reports which allows to specify a number of parameters that are used when making a report
- definition of ad hoc reports which are made from scratch, to cover the specific reporting needs of the NCB or the ECB.

Reporting from the SRDB, Continued

Reporting to the ECB

The SRDB enables NCBs to generate files for reporting to the ECB. The use of this SRDB interface for ECB reporting guarantees consistent reporting to the ECB for participating NCBs.

The process of reporting to the ECB is as follows:

Stage	Description
1	The NCB checks the completeness and validity of the data to be sent to the ECB.
2	The NCB triggers the generation of the required files.
3	The files are sent to the ECB, where the concerned data are further processed and analysed if necessary.

8. COLLATERAL IN EMERGENCY SITUATIONS

Overview

Introduction CCBM2 offers functionalities for collateral management in various emergency or stress situations.

Contents This chapter contains the following topics:

8.1. Introduction

Functionality   CCBM2 is able to:
- accept new eligible collateral for the TARGET2 contingency module
- offer functions in the domain of emergency collateral.

Emergency collateral   Consequently, CCBM2, under condition of a positive Governing Council decision:
- accepts other collateral than the listed eligible assets, in emergency or stress situations (e.g. the acceptance of non-euro denominated assets in custody with G10 central banks)
- serves as Eurosystem platform for the provision of euro eligible collateral in emergency situations in other currency zones

8.2. TARGET2 contingency module

TARGET2 Contingency Module

When TARGET2 runs in contingency mode, a counterparty has to deliver additional collateral to get a starting balance/credit in the contingency module.

CCBM2 will accept new eligible collateral, feeding the TARGET2 contingency module with the necessary payment capacity, to process the most critical and urgent payments.

8.3. Emergency collateral

Overview

Introduction   This section describes two types of emergency collateral.

The possibility to accept foreign collateral in emergency situations is currently being explored by the Eurosystem.

Contents   This section contains the following topics:

8.3.1.   Non-eligible euro collateral

Non-eligible euro collateral

Basically, credit is never granted without adequate (eligible) collateral. In case the Governing Council decides to deviate from this rule, CCBM2 needs to be able to:

- receive and process this collateral, and
- segregate it from the collateral used under normal circumstances.

8.3.2. Foreign collateral (optional)

Introduction Accepting foreign collateral is not included in the scope of the first CCBM2 release. However, this can be developed and realised in the following years. Any development of this type will be demand driven.

Non-euro collateral for the Eurosystem The Eurosystem is exploring possibilities to accept foreign collateral, i.e. collateral in an other currency than euro, in emergency situations.

<u>See</u> The CPSS report 'Cross-Border Collateral Arrangements (CBCA report)' BIS, January 2006 provides important background information on this topic.

CCBM2 & foreign collateral In principle, several possibilities are feasible, e.g.:
- accepting central bank guarantee based on foreign collateral from another central bank
- CCBM-like arrangements with foreign central banks
- direct access to non-euro markets

Depending on the options approved by the Governing Council, CCBM2 needs:
- an exchange rate mechanism
- an FX risk mitigating mechanism
- to integrate foreign assets in its static data
- to comply with requirements of non-euro markets etc.

<u>Note</u> Synergy with the Market Operation Platform project will be further examined (e.g. the database of foreign assets could be reused).

Euro collateral for foreign central banks Similarly, in emergency situations outside the euro area, the Eurosystem is able to use CCBM2 to offer eligible euro collateral to foreign central banks

9. ICT

Introduction   This chapter describes the CCBM2 IT infrastructure and its operation model.

Contents   This chapter contains the following topics:

9.1. CCBM2 ICT infrastructure, availability measures, technical aspects

Overview

Introduction   CCBM2 and its future operations are based on a centralised structure with a high level of continuity, security and availability measures. This allows to abide by a series of basic principles which guarantee that the application satisfies all customer needs and expectations. An overview of the IT infrastructure is given for both the development and the operations of CCBM2.

Contents   This part contains the following topics:

9.1.1. General infrastructure

CCBM2 components

CCBM2 comprises the following components:
- Central software for:
  - the Message Router
  - the Credit & Collateral Module
  - the Securities Module
  - the Credit Claims Module
  - Static Data support functions
  - Monitoring & Reporting support functions
- Systems and application software (middleware)
- A secure wide area network to connect external parties (customers):
  - NCBs
  - Counterparties and CSDs
  - ECB
  - Data providers
- Shared service components of the ESCB
- Security infrastructure, such as a firewall infrastructure.

Technical operation

The CCBM2 technical operation has a high degree of automation to reduce human operator errors and simplify the manageability of the infrastructure. In addition, the CCBM2 application complies with the requirements as defined by the clients:
- Confidentiality
- Integrity
- Availability.

9.1.2. Global Configuration

Overview

ESCB reference architecture

The application is built according to the ESCB IT principles and standards.

Contents

This part contains the following topics:

9.1.2.1.   High availability and continuity

RTO and RPO
The operational environment guarantees a:
- Recovery Time Objective or RTO of maximum 2 hours in case of a regional disaster (RTO is the maximum allowed time that the application will not be available)
- Recovery Point Objective or RPO of zero (RPO is the maximum allowed loss of data and/or transactions).

Dual hosting operations model with regional sites
In order to meet the requirements, CCMB2 is operating in a dual hosting model. The application modules are running alternatively in multiple regions. The region where CCBM2 is operating at a given time is called the active region. The other regions are called passive regions. In each region one site is operative, i.e. the primary site. Depending on the business continuity requirements – mainly RPO and RTO – each region has its secondary or disaster recovery site available for a disaster failover.

The users do not recognise or realise in which region the modules are active (running).

The data, the application modules and the configuration data will be kept up-to-date in the regions by means of data replication techniques on both the application and the database level.

High availability and continuity, Continued

Operations support

The local support team of the active site provides operations support during the interactive time-slot. All contact channels are set up in such a way that switching between the two regions will not affect the users that require support.

This will be realised by setting up, among other things, a single phone number, an e-mail address, a common centralised website, etc.

The effective location of the operational site is transparent to users and clients. However, the information on the site which is operational at a given moment, is published (the "rotation calendar") on the CCBM2 website for information purposes only.

9.1.2.2. Principles of interfacing with CCBM2

Introduction

To meet the requirements of the market consultation as much as possible, and subject to further cost/benefit considerations, interfacing with and accessing CCBM2 is based on:
- SWIFT
- EXDI
- Internet.

U2A Web Interface

The User-to-Application interface is called "Web Interface" and uses a secured internet connection. It is described in the chapter on Reporting & Monitoring.
CCBM2 would welcome it if the ICM could include a link to the CCBM2 Web Interface.

A2A interfaces

Application-to-Application interfaces are available for all different actors interacting with CCBM2. Depending on the actor they make use of SWIFTNet, EXDI or Secured internet access.

SWIFTNet

A2A SWIFTNet FIN messaging is used for communication with:
- the counterparties
- NCBs not participating in CCBM2
- T2, PHAs, T2S, SSSs and CSDs.

Note:
In the current version of the UR requirements ISO 15022 is applied.
The future standard for SWIFTNet FIN will be ISO 20022 and CCBM2 will comply with this future standard.

A2A SWIFTNet Interact/Fileact will be used for the interaction with ICM for the management of credit lines in T2.

Secure internet access

As an alternative to SWIFTNet FIN (e.g. for smaller counterparties or counterparties not wishing to develop and/or use systems based on SWIFTNet), besides the interactive U2A interface, CCBM2 also foresees a secured A2A access via internet.

EXDI

Communication between CCBM2 and participating NCBs (e.g. for reports, static data,...), ECB (e.g. EADB, reports,...) and the valuation hubs is performed using the EXDI Enterprise Service Bus.

Eurosystem Single Interface

CCBM2 should follow the Eurosystem Single Interface concept.

9.1.2.3.   ICT infrastructure

Introduction   The broad outlines of the ICT-environment are sketched here. The final
environment may differ from the situation described.
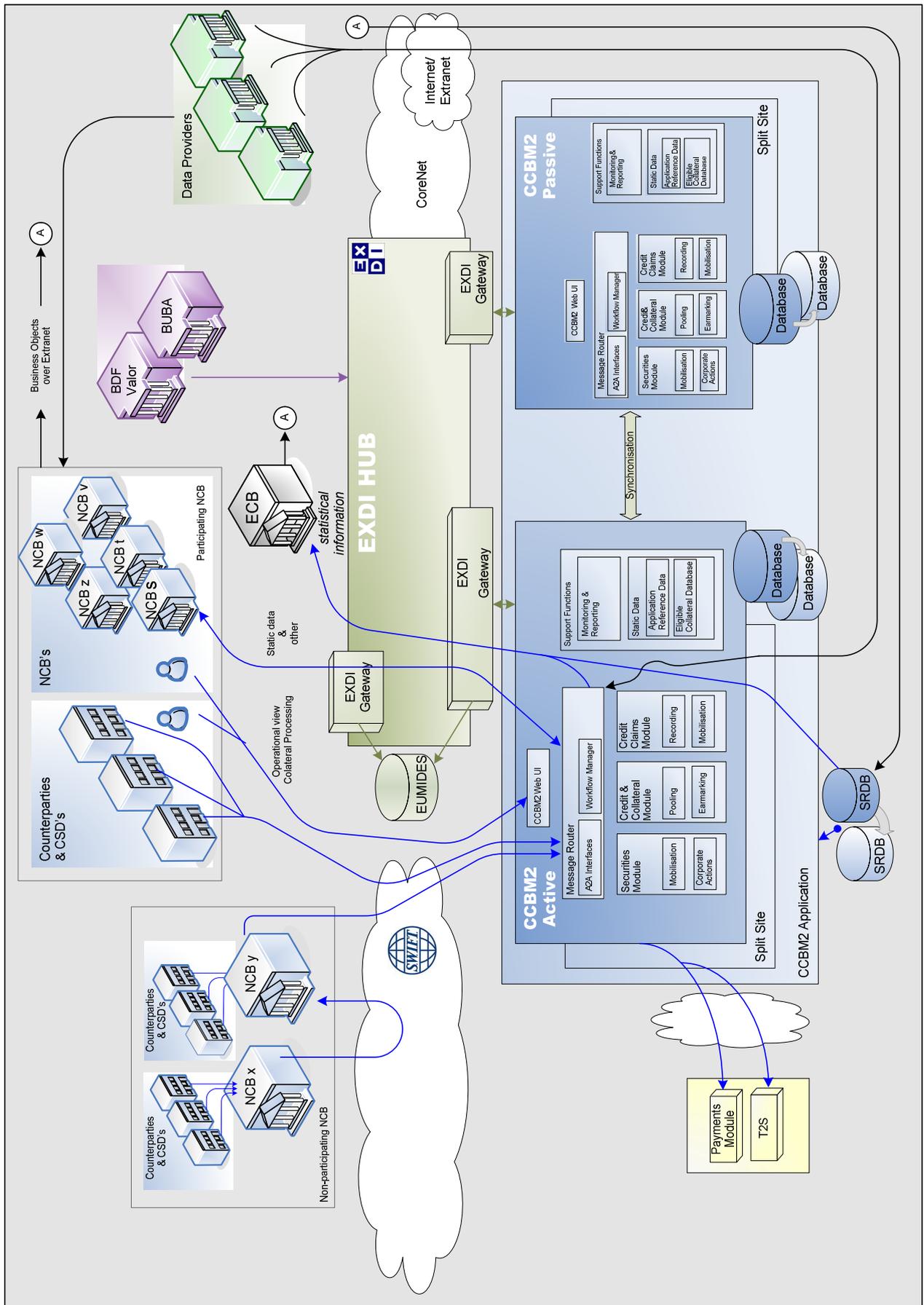
9.1.2.4. CCBM2 environments

Introduction   CCBM2 includes a number of independent processing environments to support development, test & training and live operations. In this way a sort of CCBM2 landscape is created. The number of environments corresponds to the application development life cycle. A customer test environment should always have the same software configuration as the live environment.

To maximise the availability and confidentiality of these environments, the technical IT infrastructure components are dedicated to CCBM2.

Definition   An environment is defined as a specific occurrence of the CCBM2 application with a specific purpose and audience.
These environments have different statuses, depending on the following requirements:
- accessibility: global or limited access
- availability: depending on the status in the development life cycle
- stability.

Three categories   Three main categories can be defined. Each category serves a different purpose:
- development environments
- testing environments
- production environments.

Development environments   Development environments are created for constructing the CCBM2 application. They can only be accessed by the developing and hosting partners.

Testing environments   Several testing environments are available. Each testing environment serves a specific purpose:
- verify the working of the application and verify whether the application is conform with the requirements and the intended functionality
- verify the working of the application and the underlying infrastructure (e.g. when it is subjected to the stress of high volumes, in case of switching to a redundant component..)
- train new customers and users. This environment will have a software configuration identical to the production environment (in case of training of new users and customers) or identical to the future production environment (in case of training for new releases and functions).

CCBM2 environments, Continued

Production environments

The production environment is formed by a set of different occurrences of CCBM2. It guarantees that the application is working stably and reliably. The production environment consists of:

- a combination of four sites:
  - the "active" site
  - the "passive" site
  - the respective local "recovery" sites
- the Statistical & Reporting Database (SRDB).

Note   In case of concurrent problems, the production environment always has top priority and is given maximum attention.

9.1.3. Security

Introduction   CCBM2 is fully compliant with the Security Requirements and Controls established at ESCB-level.

CCBM2 will, for example, provide adequate security measures such as:
- protection against external intrusion attempts
- protection against unauthorised actions
- data protection of each individual owner.

Implementation   All elements of adequate data protection are implemented in those environments where detailed data with a production status reside (e.g. training environment, SRDB).

9.2. Operation Model

Rotation of operations

The workload of the different environments is distributed between the regions. The active region hosts and manages the live/production environment. The passive region hosts and manages the test & training environments and the standby contingency environment. Periodical rotations between the regions take place. By doing so, the staff members keep their operational knowledge of the system up-to-date.

Efficiency of operation times

High availability is reached through:
- extended opening hours for the IT-environment and the support team
- the technical and practical setup of the operational environment
- measures to avoid interruptions for any type of incident.

Opening hours

The availability of CCBM2 is synchronised with the opening hours of all financial ESCB-applications:
- from Monday 01:00 am till Friday 10:00 pm
- the provision of a daily maintenance window from 10:00 pm till 01:00 am
- interactive availability spans from 06:30 am till 07:30 pm.

CCBM2 will not be available during weekends (Friday 10:00 pm - Monday 01:00 am) or during ESCB holidays.

Note The configuration of CCBM2 is characterised by a high degree of flexibility in opening hours (e.g. in case the opening period needs to be extended).

10. ANNEX

Overview

Introduction   This annexe describes use cases, explaining the process of mobilising securities when the system includes different actors:
- all CCBM2 modules; or
- only the Message Router; or
- the Message Router and one or more other modules.

The scenarios above are also described when external CMSs are taken into consideration.

Moreover it contains also two use cases on the marginal lending facility on request.

Contents   This annex contains the following topics:

10.1. All CCBM2 modules

Overview   This section describes 3 use cases of mobilisation of securities with all the CCBM2 modules.

Contents   This section contains the following topics:

10.1.1. Use case 1:Domestic and cross-border mobilisation between two participating NCBs

Situation

The following scheme shows how securities are successfully mobilised as collateral when:

- collateral is used in a domestic or cross-border context
- both NCBs (HCB and CCB) participate in CCBM2
- all CCBM2 modules are chosen by the HCB and the CCB
- the counterparty sends collateralisation instructions directly to CCBM2
- pooling collateral has been chosen.

Illustration

The image below describes the mobilisation flow in CCBM2 and the relations between the different modules:

Continued on next page

Process

Stage	N°	Description
Mobilisation request	1	The counterparty sends a mobilisation request to CCBM2.
Validation & routing	2	The Message Router performs validity checks and sends the request to the Securities Module.
Preparing mobilisation instruction	3	The Securities Module performs eligibility and additional checks and prepares a mobilisation instruction for the SSS/CSD/T2S.
Sending mobilisation instruction	4	The Message Router sends the mobilisation instruction to the SSS/CSD/T2S.
Matching	5	The SSS/CSD/T2S can send several types of status messages: regarding validation, matching and/or settlement. CCBM2 needs the settlement status message to go the next stage.
Validation & routing	6	The Message Router performs validity checks and sends the message to the Securities Module.
Settlement	7	The SSS/CSD/T2S sends a settlement confirmation to the Message Router.
Validation & routing	8	The Message Router performs validity checks and sends the message to the Securities Module.
Accounting records update	9	The Securities Module updates the securities accounting records of the HCB and the CCB and prepares a confirmation message for the counterparty.
Sending mobilisation confirmation	10	The Message Router sends the confirmation message to the counterparty.
Routing	11	The Message Router informs the Credit & Collateral Module that new collateral is received.
Add new collateral to the pool	12	The Credit & Collateral Module valuates the new collateral and adds it to the pool account of the counterparty and calculates the new credit line and prepares a message to update the credit line of the counterparty in TARGET2.
Sending a modify credit line	13	The Message Router sends a modify credit line instruction to TARGET2.
Credit line confirmation	14	TARGET2 sends a confirmation message to the Message Router.
Routing and new global position	15	The Message Router sends the confirmation to the Credit & Collateral Module. The Credit & Collateral Module adapts the global position.

10.1.2. Use case 2 : Cross-border mobilisation when only the HCB participates in CCBM2

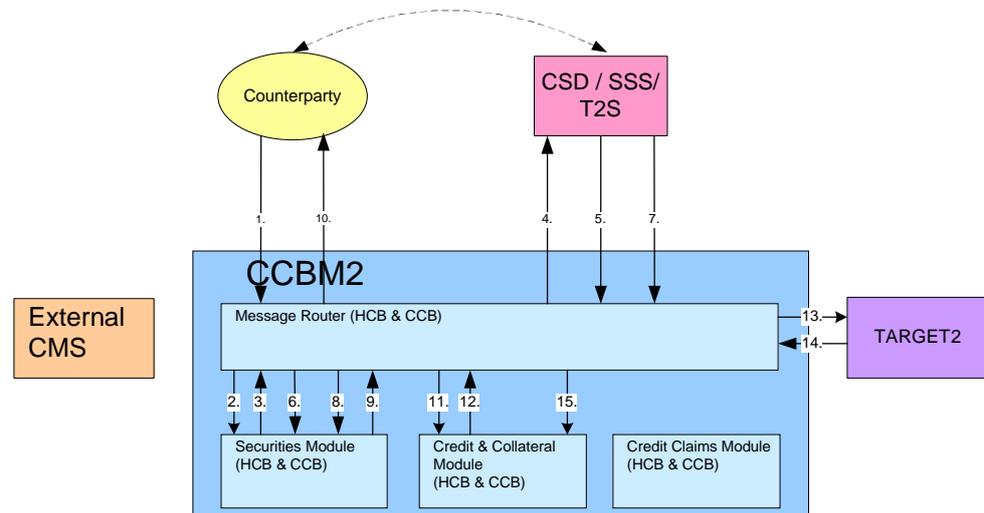**Situation**

The following scheme shows how securities are successfully mobilised as collateral when:
- collateral is used in a cross-border context
- only the HCB participates in CCBM2
- all CCBM2 modules are chosen by the HCB
- the counterparty sends collateralisation instructions directly to CCBM2
- pooling collateral has been chosen.

Illustration

The image below describes the mobilisation flow in CCBM2 and the relations between the different modules:

Use case 2 : Cross-border mobilisation when only the HCB participates in CCBM2, Continued

Process

Stage	Nº	Description
Mobilisation request	1	The counterparty sends a mobilisation request to CCBM2.
Validation & routing	2	The Message Router performs validity checks and sends the request to the Securities Module.
Preparing mobilisation instruction	3	The Securities Module: • performs eligibility and additional checks • prepares a mobilisation instruction to the CCB.
Sending mobilisation instruction	4	The Message Router sends the mobilisation instruction to the CCB.
Settlement	5	The CCB sends a settlement instruction to the Message Router.
Validation & routing	6	The Message Router performs validity checks and forwards the message to the Securities Module.
Accounting records update	7	The Securities Module updates the securities accounting records of the HCB and prepares a confirmation message for the counterparty.
Sending mobilisation confirmation	8	The Message Router sends the confirmation message to the counterparty.
Routing	9	The Message Router informs the Credit & Collateral Module that new collateral is added.
Add new collateral to the pool	10	The Credit & Collateral Module: • valuates the new collateral • calculates the new credit line • prepares a message to update the credit line of the counterparty in TARGET2.
Sending a modify credit line	11	The Message Router sends a modify credit line instruction to TARGET2.
Credit line confirmation	12	TARGET2 sends a confirmation message to the Message Router.
Routing and new global position	13	The Message Router sends the confirmation to the Credit & Collateral Module. The Credit & Collateral Module adapts the global position.

10.1.3. Use case 3: Cross-border mobilisation when only the CCB participates in CCBM2
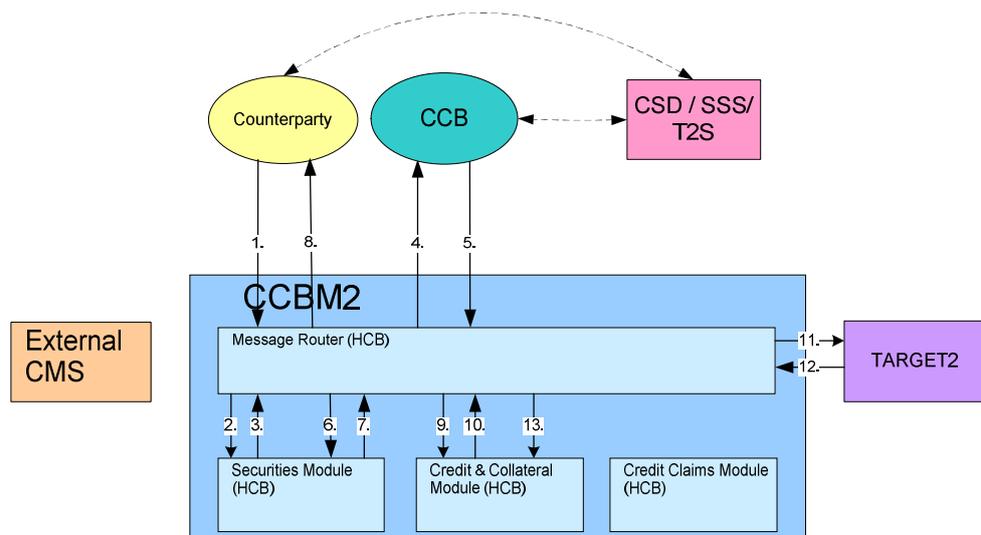
Situation

The following scheme shows how securities are successfully mobilised as collateral when:

- collateral is used in a cross-border context
- only the CCB participates in CCBM2
- all CCBM2 modules are chosen by the CCB
- pooling collateral has been chosen.

Illustration

The image below describes the mobilisation flow in CCBM2 and the relations between the different modules:
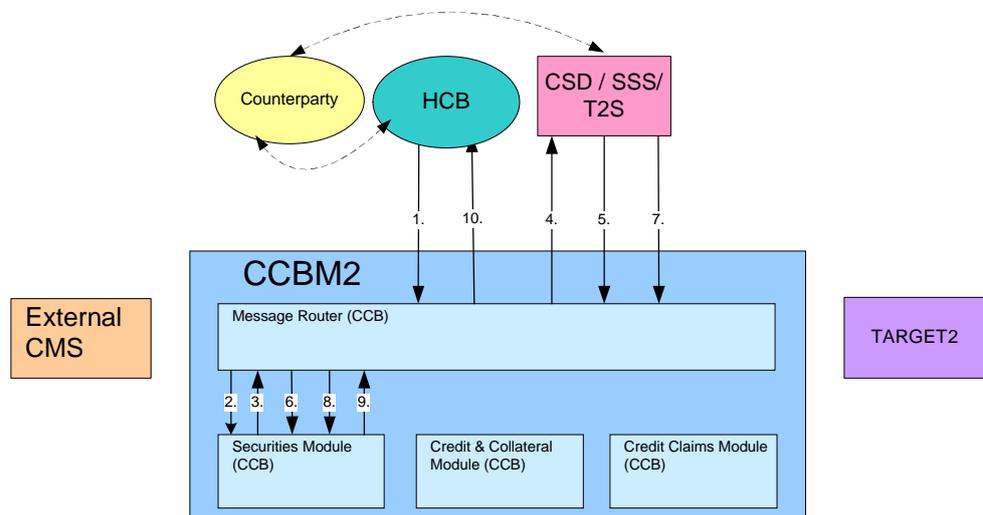
Continued on next page

Use case 3 :Cross-border mobilisation between when only an CCB, Continued

Process

Stage	N°	Description
Mobilisation request	1	The HCB sends a mobilisation request to CCBM2.
Validation and routing	2	The Message Router: • performs validity checks • sends the request to the Securities Module.
Preparing mobilisation instruction	3	Securities Module: • performs eligibility and additional checks • prepares a mobilisation instruction to the CSD/SSS/T2S.
Sending mobilisation instruction	4	The Message Router sends the instruction to the CSD/ SSS/T2S.
Matching	5	The SSS/CSD/T2S can send several types of status messages: regarding validation, matching and/or settlement. CCBM2 needs the settlement status message to go the next stage.
Validation and routing	6	The Message Router: • performs validity checks • sends the message to the Securities Module.
Settlement	7	The CSD/SSS/T2S sends a settlement confirmation to the Message Router.
Follow-up	8	The Message Router performs validity checks and sends the message to the Securities Module.
Accounting records update	9	The Securities Module updates the securities accounting records of the CCB and prepares a confirmation message for the HCB.
Send mobilisation confirmation	10	The Message Router sends the confirmation message to the HCB.

10.2. All CCBM2 modules and an External CMS

Overview

This section describes one use case of mobilising securities with all the CCBM2 modules and the collaboration of an external CMS.

CCBM2 interfaces with the external CMS for a transaction by transaction basis.

Situation

The following scheme shows how securities are successfully mobilised as collateral when:
- collateral is used in a domestic or cross-border context
- both NCBs (HCB and CCB) participate in CCBM2
- all CCBM2 modules are chosen by the HCB and the CCB
- the external CMS initiates the collateralisation on behalf of the counterparty
- pooling collateral has been chosen.

Illustration

The image below describes the mobilisation flow in CCBM2 and the relations between the different modules:
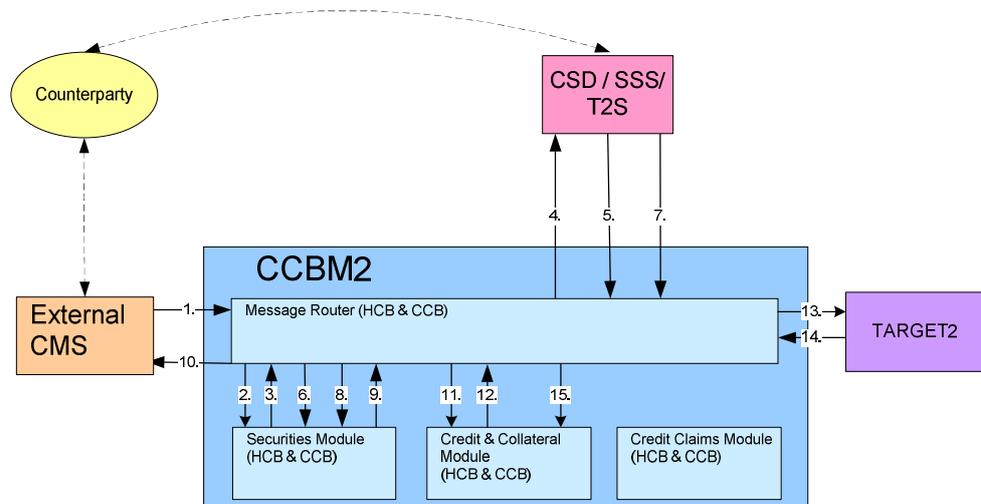
All CCBM2 modules and an external CMS, Continued

Process

Stage	Nº	Description
Mobilisation request	1	The external CMS sends a mobilisation request to CCBM2.
Validation & routing	2	The Message Router performs validity checks and sends the request to the Securities Module.
Preparing mobilisation instruction	3	The Securities Module: • performs eligibility and additional checks • prepares a mobilisation instruction to the SSS/CSD/T2S.
Sending mobilisation instruction	4	The Message Router sends the mobilisation instruction to the SSS/CSD/T2S.
Matching	5	The SSS/CSD/T2S can send several types of status messages: regarding validation, matching and/or settlement. CCBM2 needs the settlement status message to go the next stage.
Validation & routing	6	The Message Router performs validity checks and sends the message to the Securities Module.
Settlement	7	The SSS/CSD/T2S sends a settlement confirmation.
Validation & routing	8	The Message Router performs validity checks and sends the message to the Securities Module.
Accounting records update	9	The Securities Module: • updates the securities accounting records of the HCB and the CCB. • prepares a confirmation message for the external CMS.
Sending mobilisation confirmation	10	The Message Router sends the confirmation message to the external CMS.
Routing	11	The Message Router informs the Credit & Collateral Module that new collateral is added.
Add new collateral to the pool	12	The Credit & Collateral Module valuates the new collateral, calculates the new credit line and prepares a message to update the credit line of the counterparty in TARGET2.
Sending an modify credit line	13	The Message Router sends a modify credit line instruction to TARGET2.
Credit line confirmation	14	TARGET2 sends a confirmation message to the Message Router.
Routing and new global position	15	The Message Router sends the confirmation to the Credit & Collateral Module. The Credit & Collateral Module adapts the global position.

10.3. Only Message Router, Credit & Collateral Module and an External CMS

Overview

This section describes one use case of mobilisation of securities with only the CCBM2 Message Router , the Credit & Collateral Module and the collaboration of an external CMS.
The external CMS interfaces with CCBM2 on a transaction by transaction basis and replaces the Securities Module.

Situation

The following scheme shows how securities are successfully mobilised as collateral when:

- collateral is used in a domestic or a cross-border context
- both NCBs (HCB and CCB) participate in CCBM2
- HCB has only chosen the Message Router and the Credit & Collateral Module and uses an external CMS.
- the counterparty sends collateralisation instructions directly to CCBM2
- all CCBM2 modules are chosen by the CCB
- pooling collateral was chosen.

Illustration

The image below describes the mobilisation flow in CCBM2 and the relations between the different modules:

Continued on next page

Process

Stage	N°	Description
Mobilisation request	1	The counterparty sends a mobilisation request to CCBM2.
Validation and routing	2	The Message Router performs validity checks and sends the mobilisation request to the external CMS.
External CMS message	3	The external CMS sends a mobilisation instruction to the Message Router.
Sending mobilisation instruction	4	The Message Router sends the instruction to the SSS/CSD/T2S.
Matching	5	The SSS/CSD/T2S can send several types of status messages: regarding validation, matching and/or settlement. CCBM2 needs the settlement status message to go the next stage.
Validation and routing	6	The Message Router performs validity checks and sends the message to the Securities Module (CCB).
Settlement	7	The SSS/CSD/T2S sends a settlement confirmation to the Message Router.
Validation and routing	8	The Message Router performs validity checks and sends the message to the Securities Module (CCB).
Accounting records update	9	The Securities Module updates the securities accounting records of the CCB and prepares a confirmation message for the external CMS.
Validation and routing	10	The Message Router performs validity checks and sends the message to the external CMS.
External CMS message	11	The external CMS sends a confirmation message to the Message Router.
Mobilisation confirmation	12	The Message Router sends the confirmation message to the counterparty.
New collateral	13	The Message Router informs the Credit & Collateral Module that new collateral is added.
Calculate new global position	14	The Credit & Collateral Module valuates the new collateral, calculates the new credit line and prepares a message to update the credit line of the counterparty in TARGET2.
Modify credit line	15	The Message Router sends a modify credit line instruction to TARGET2.
Credit line confirmation	16	TARGET2 sends a confirmation message.
New global position	17	The Message Router sends the confirmation to the Credit & Collateral Module. This module adapts the global position.

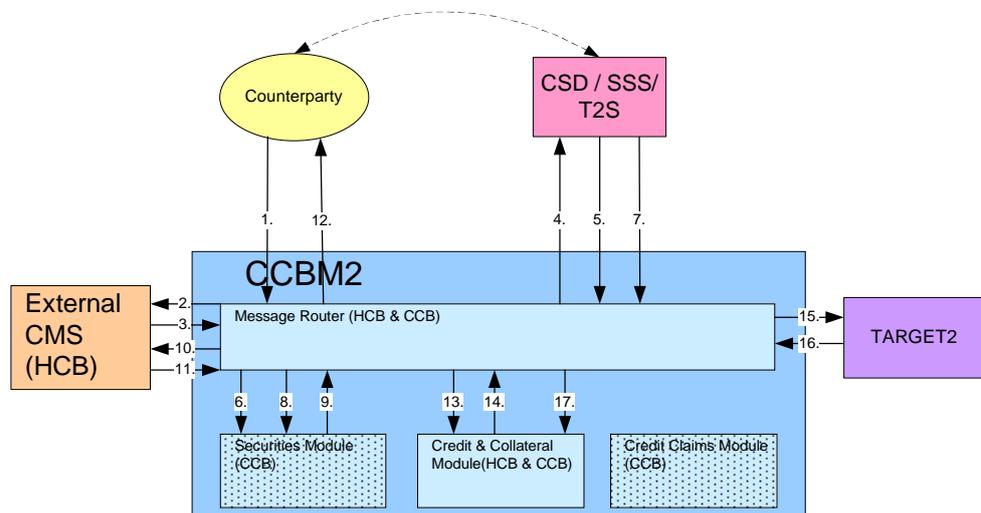# 10.4. Only Message Router and an External CMS

Overview

This section describes one use case of mobilisation of securities with only the CCBM2 Message Router.
The external CMS interfaces with CCBM2 on a transaction by transaction basis.

Situation

The following scheme shows how securities are successfully mobilised as collateral when:

- collateral is used in a domestic and cross-border context
- both NCBs (HCB and CCB) participate in CCBM2
- HCB has only chosen the Message Router and uses an external CMS.
- the counterparty sends collateralisation instructions directly to CCBM2
- all CCBM2 modules are chosen by the CCB
- pooling collateral has been chosen.

Illustration

The image below describes the mobilisation flow in CCBM2 and the relations between the different modules:

Only Message Router and an External CMS, Continued

Process

Stage	N°	Description
Mobilisation request	1	The counterparty sends a mobilisation request to CCBM2.
Validation & routing	2	The Message Router performs validity checks and sends the mobilisation request to the external CMS.
External CMS message	3	The external CMS sends a mobilisation instruction to the Message Router.
Sending mobilisation instruction	4	The Message Router sends the mobilisation instruction to the SSS/CSD/T2S.
Matching	5	The SSS/CSD/T2S can send several types of status messages: regarding validation, matching and/or settlement. CCBM2 needs the settlement status message to go the next stage.
Validation & routing	6	The Message Router performs validity checks and sends the message to the Securities Module (CCB).
Settlement	7	The SSS / CSD / T2S sends a settlement confirmation.
Validation & routing	8	The Message Router performs validity checks and sends the message to the Securities Module (CCB).
Accounting records update	9	The Securities Module updates the securities accounting records of the CCB and prepares a confirmation message for the external CMS.
Validation & routing	10	The Message Router performs validity checks and sends a confirmation message to the external CMS.
External CMS message	11	The external CMS sends a confirmation message to the Message Router.
Mobilisation confirmation	12	The Message Router sends the confirmation message to the counterparty.
Modify Credit line message	13	The external CMS sends an message to update the credit line of the counterparty in TARGET2 to the Message Router.
Modify credit line	14	The Message Router sends a modify credit line instruction to TARGET2.
Credit line confirmation	15	TARGET2 sends a confirmation message to the Message Router.
Routing	16	The Message Router sends the confirmation to the external CMS.

10.5. Marginal Lending Facility on Request

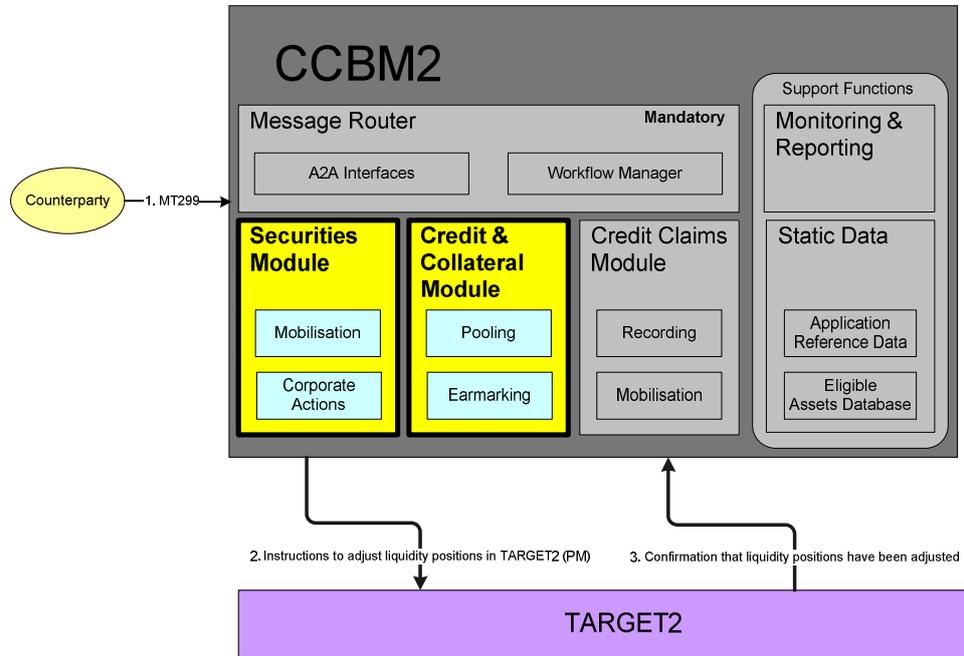**Overview**   This section describes 2 use cases of marginal lending facility on request.

Contents   This section contains the following topics:

10.5.1. Use case 1: Marginal Lending Facility on Request - Pledge with Pooling

Illustration

Assumption: NCB makes full use of CCBM2 and uses the Standing Facilities Module of TARGET2.

Continued on next page

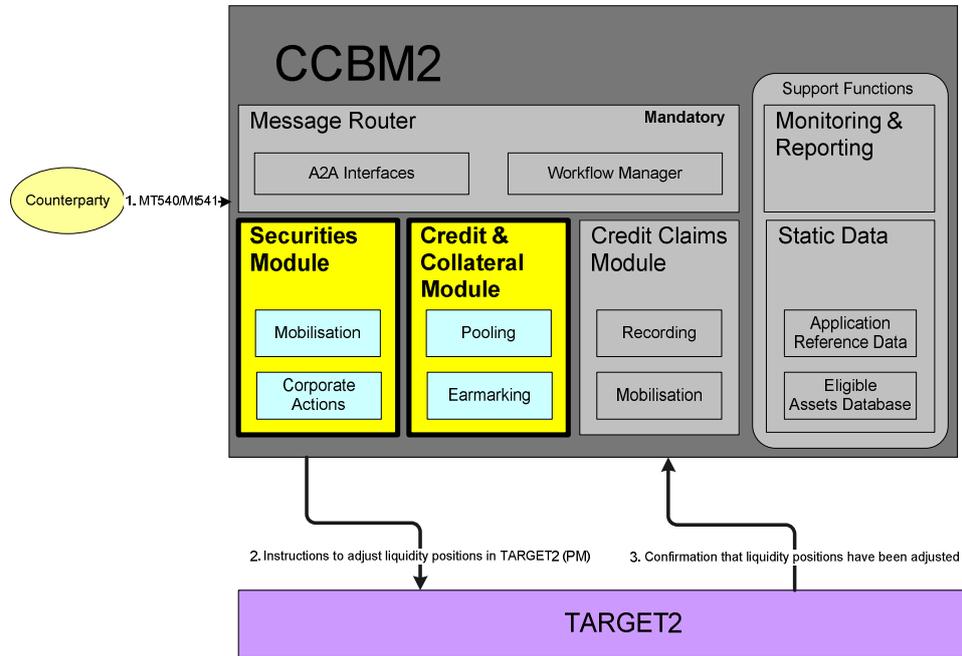# Use case 1: Marginal Lending Facility on Request - Pledge with Pooling, Continued

Process

Stage	Description
1 S until 18:15 CET or 18:30 CET on the last day of the minimum reserve maintenance period	If a counterparty (either a counterparty with a credit line in TARGET2 or one without such a credit line) needs overnight liquidity at the end of the day (either to respect the reserve average or to settle queued payments), it sends a request (e.g. MT299) for recourse to the marginal lending facility to CCBM2. This request for overnight credit has to specify the amount of marginal lending requested.
	CCBM2 checks if the collateral in the pool is sufficient to grant the marginal lending facility.
2	If the pool is sufficient, CCBM2 sends an order to TARGET2 for the setting up of the marginal lending facility transfers. Please refer to Chapter 12.3.1 of Book 2 of the TARGET2 UDFS (or Chapter 5.3 of the TARGET2 GFS) for further details on this standing facility. As a result TARGET2 debits the marginal lending facilities account of the counterparty and transfers the liquidity to the counterparty´s RTGS account. T2 optionally sends the notifications to the counterparty (MT910) and to the counterparty´s NCB (MT900).
3	TARGET2 sends a notification to CCBM2 to confirm the activation of the marginal lending facility[1]. Based on this confirmation, CCBM2 adjusts the internal recording regarding the counterparty´s liquidity position in TARGET2 and keeps record of the amount of marginal lending granted in the Credit & Collateral Module.
S 19:00 CET	At the start of the following business day, TARGET2 activates the refunding of the marginal lending and notifies CCBM2. Then, CCBM2 adjusts the internal records regarding the status of the credit provision. The credit given is then again booked as intraday credit.

---

[1] The current version of the UDFS of T2 does not envisage the sending of such notification to the collateral manager. Thus, the opportunity to request the introduction of this notification in T2 should be evaluated.

10.5.2. Use case 2: Marginal Lending Facility on Request – Repo with Pooling

Illustration

Assumption: NCB makes full use of CCBM2 and uses the Standing Facilities Module of TARGET2.

Continued on next page

Use case 2: Marginal Lending Facility on Request – Repo with Pooling, Continued

Process

Stage	Description
1 S 18:00 CET for (i) and until 18:00 CET on S for (ii)	If a counterparty needs overnight liquidity in TARGET2, it can request recourse to the marginal lending facility by (i) transferring an intraday repo operation into an overnight repo operation or (ii) by starting a new repo operation. In case of a new repo operation, the normal procedure for delivering collateral applies (see chapter 4.3.7 of the User Requirements, use case 1), started by sending a MT540/MT541 to CCBM2 as depicted in this use case. Transferring an intraday repo operation into an overnight repo operation is done automatically, no additional instructions from the counterparty are needed.
2	CCBM2 sends an order to TARGET2 for the setting up of the marginal lending facility transfers. As a result TARGET2 debits the marginal lending facilities account of the counterparty and transfers the liquidity to the counterparty´s RTGS account.
3	TARGET2 sends a notification to CCBM2 to confirm the activation of the marginal lending facility[2]. Based on this confirmation, CCBM2 adjusts the internal recording regarding the counterparty´s liquidity position in TARGET2 and keeps record of the amount of marginal lending granted in the Credit & Collateral Module.
S 19:00 CET	At the start of the following business day, TARGET2 activates the refunding of the marginal lending and notifies CCBM2. Then, CCBM2 adjusts the internal records regarding the status of the credit provision. The credit given is then again booked as intraday credit.

---

[2] The current version of the UDFS of T2 does not envisage the sending of such notification to the collateral manager. Thus, the opportunity to request the introduction of this notification in T2 should be evaluated.

11. GLOSSARY

A2A	Application-to-application. Communication directly between applications.
ABS	Asset Backed Security.
CCB	Correspondent Central Bank
CCBM	Correspondent Central Bank Model. A mechanism established by the European System of Central Banks with the aim of enabling counterparties to use underlying assets in a cross-border context. In the CCBM, national central banks act as custodians for one another.
CCBM2	Collateral Central Bank Management
CCM	Credit & Collateral Module
CCP	Central Counterparty
CeBM	Central Bank Money
CMS	Collateral Management System
Connected payment	Payments that trigger a change in the credit line in Target2 together with the debit or credit.
Credit line	Maximum collateralised overdraft position in TARGET2.
CSD	Central Securities Depository.
DAP	Delivery after payment
Direct debit	An authorised debit on the payer's bank account initiated by the payee.
DVP	Delivery versus Payment.
EADB	Eligible Assets Database
ECAF	Eurosystem Credit Assessment Framework
ECAI	External Credit Assessment Institution
ECDB	Eligible Collateral Database (copy of EAD in CCBM2)
ECMS	Euro Collateral Management System
EEA	European Economic Area
ESCB	European System of Central Banks
EU	European Union

EXDI	ESCB XML data integration; Inter-NCB communication protocol.
FOP	Free of Payment
HCB	Home Central Bank
ICAS	In-house Credit Assessment System
ICM	Information and Control Module (TARGET2).
ICSD	International Central Securities Depository
IDC	Intraday Credit
IRB	Internal Ratings Based system
ISIN	International Securities Identification Number
LTRO	Longer Term Refinancing Operation
Margin call	If the value of the underlying assets as collateral falls below the level of credits to cover, the central bank requires counterparties to supply additional assets (or cash).
Marginal lending facility	A standing facility of the Eurosystem which counterparties may use to receive overnight credit from a CB.
MFI	Monetary Financial Institution.
MRO	Main Refinancing Operation.
NCB	National Central Bank
Netting	An agreed offsetting of positions or obligations.
NPV	Net Present Value
OMO	Open Market Operation. Reverse transactions are the main open market instrument of the Eurosystem and can be employed in all four categories of Eurosystem operations: main refinancing operations; longer-term refinancing operations; fine-tuning operations; and structural operations.
Overnight credit	Overnight Credit through use of the marginal lending facility.
PAD	Payment After Delivery
Payment	In CCBM2 context; Bank-to-bank payments (MT 202, MT 204)
Payment capacity	Credit balance on the account plus collateralised credit line for overdraft (if available).
PD	Probability of default. The probability of default is the likelihood that a loan will not be repaid and will fall into default

PSE	Public Sector Entities
Raw data file	The raw data file serves as check file for the verification of the positions of the General Ledger
Real-time gross settlement	The continuous (real-time) settlement of funds or securities transfers individually on an order by order basis (without netting).
Repo	Repurchase Agreement.
RIAD	ECB Data Exchange system
RMBD	Retail Mortgage-Backed Debt instrument
RT	Rating Tool
RTGS	Real Time Gross Settlement System
SSS	Securities Settlement System.
SM	Securities Module
SRDB	Statistical & Reporting Database
SSS	Securities Settlement System
STP	Straight Through Processing
T2	TARGET2
T2S	Target2 Securities
TOP	ECB's system for subscription and allocation of open market operations.
Trigger point	A prespecified level of the value of the liquidity provided at which a margin call is executed.
U2A	User-to-Application The objective is to permit direct communication between a participant's users and CCBM2.
XML	Acronym for Extensible Mark-up Language. Subset of Standard Generalised Mark-up Language (SGML - ISO 8879)